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CANNED FOOD MANUAL



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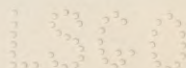
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CANNED FOOD MANUAL



Prepared for
THE UNITED STATES ARMY
by
AMERICAN CAN COMPANY
230 Park Avenue, New York, N. Y.



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Foreword

WINTER was a season of disaster for the French army and navy of 1795. Fresh fruits and vegetables were lacking in the winter diet. And as a result, scurvy attacked and disabled many soldiers and sailors.

Finally, the French Government offered an award of 12,000 francs for an improved method of preserving food.

It was Nicolas Appert, French brewer, distiller, confectioner, and one time chef, who achieved such success in his experiments in preserving food, that he received the award from Emperor Napoleon.

That was the beginning of commercial canning.

Yes, a war gave birth to the art of canning. And since the time of Nicolas Appert, wars have proved responsible for the great forward steps this art has taken.

The reason why wars advance canning is readily seen. The job of feeding large concentrations of men . . . far from sources of food . . . creates a problem which can only be solved by a safe, scientific method of preserving food.

The history of our own country tells us that each war made different demands on the canning industry. And after the war ended, the improvements suggested by war-time conditions were gradually developed.

For instance, during the Civil War calcium chloride added to boiling water was first tried in the commercial processing of food. It increased the temperature used to process the cans from 212° Fahrenheit to 240° . . . or higher. This cut the time required to sterilize canned foods from a matter of hours to one of minutes. And so maximum production of cans of food jumped from 2,500 to 20,000 daily.

The War between the states also indicated the far-reaching possibilities of condensed milk. The Spanish-American War revived general interest in condensed milk, and demonstrated questions connected with the packaging of meat which subsequent research has answered.

World War I, of course, gave the canning industry its greatest boost. Army and Navy needs reached new highs. The public discovered canned foods on a grand scale.

World War I brought about two major changes in commercial canning. First, the sanitary can we know so well today was perfected and put in common use. And secondly, canned foods became more popular than ever before.

After the war ended, the canning industry consolidated and far exceeded the scientific advances it had made. And it also strengthened its war-time popularity.

In World War II, as in the time of Napoleon, the Civil and Spanish-American Wars, and as in World War I, military necessity is again requiring the resources and ingenuity of the canning industry. Once more, the Army and Navy of the United States is counting on canned food to help feed the men in service.

At present, the canning industry is far better prepared to meet this challenge than ever before in its history. Scientific research, important discoveries, improved methods of operation, and modern machinery combine to give canning an all time high in efficiency.

For 130 years the art of preserving food has played an important part in national emergencies both here and abroad. A close connection between our armed forces and commercial canning has always existed. That is why we are offering you the following pages of helpful information and suggestions about canned foods as they are today.

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SECTION 1

FACTS ABOUT CANNED FOODS

What are canned foods?

Canned Foods are fresh foods that have been harvested at their prime, immediately sorted, graded, cleaned, peeled, cored, pitted, husked, or whatever is necessary to prepare them for canning, and cooked in permanently sealed containers at temperatures sufficiently high to destroy the common spoilage organisms. *Canned foods are, therefore, sterile foods, ready to eat just as they come from the can.* If you prefer to eat them hot, simply heat to the desired temperature and serve.

There are a great variety of canned foods from which to choose. They are economical as well as convenient to use. Everything in the can is edible; there is no waste. The canner has done all the hard work of preparation.

Do Canneries use the so-called "surplus crops"?

No. Fruits and vegetables used by the majority of canners are grown under exclusive contracts for canning. In most cases the canner not only furnishes the seed in order to insure getting the variety most suitable for canning, but also supervises the growing and especially the harvesting to insure delivery at the cannery when the right stage of maturity is reached.



Tomatoes being received at cannery from near-by fields

How are foods commercially canned?

The details of canning necessarily vary with the nature of the product. There are, however, certain basic operations common to all canning procedures. In the belief that they may prove of interest, these operations are briefly described.

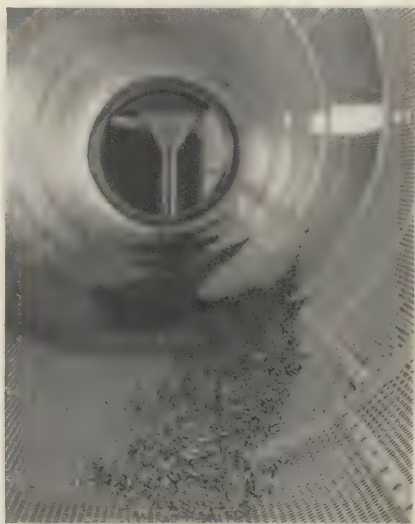
CLEANSING OPERATION: This is one of the first and most important steps in commercial canning. In general, cleansing is accomplished by washers specifically designed for different types of products. In these machines, raw food material is subjected to high-pressure sprays or strong-flowing streams of potable water while passing along a moving belt or while being tumbled by agitating or revolving screens.

With certain products, washing is preceded by a “dry” cleaning treatment. In this, the soil and dirt are mechanically removed from the food by revolving or agitating screens, or by strong air blasts.

This thorough cleansing is, of course, an essential part of the strict sanitary policy followed by today’s canners.



Peas receiving preliminary cleansing under high-pressure water sprays while passing along a moving belt



Pea-grading cylinder. As the cylinder rotates, the peas fall through the different sections, according to size, into bins below

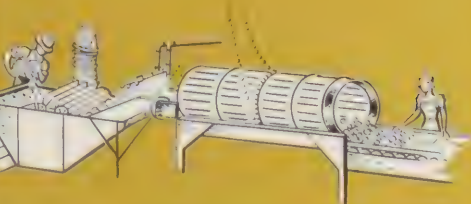
TYPICAL COMMERCIAL CANNING OPERATIONS



Harvesting



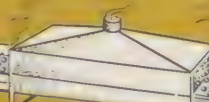
*Receiving
raw product*



Soaking and washing



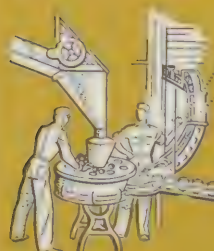
*Sorting and
grading*



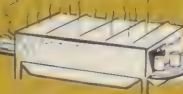
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Peeling and coring



Filling



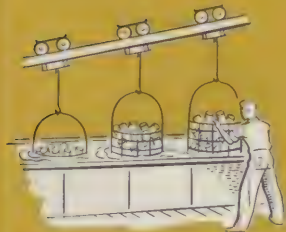
Exhausting



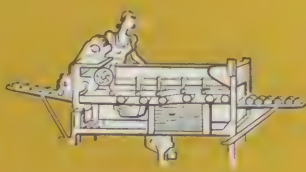
Sealing



Processing



Cooling



Labeling



*Warehousing
and packing*

GRADING AND SORTING: Many products are graded according to size and quality, and others simply sorted so that fruits or vegetables of the same characteristics can be packed and labeled in accordance with accepted standards regarding their style or size. Size-grading is usually accomplished by passing the product through perforated screens or through the opening between accurately spaced rollers or bars.

Since low quality raw foods will produce a poor canned product, quality standards are rigidly maintained from the time the raw food is purchased until it is canned. All raw food is purchased on specifications, and unsatisfactory food rejected.

THE BLANCH: Another vital operation in the canning of many vegetables and some fruits, is known as the "blanch."

In the blanch, raw food is immersed in warm or hot water, or exposed to live steam. This process softens the fibrous plant tissues, expels respiratory gases contained in the plant cells, inhibits further enzymic action, sets the natural color of some products and removes any strong flavors and mucous material adhering to the raw food product.

PEELING AND CORING: After the blanch, certain food products require peeling, coring, pitting or cutting before they are filled into the cans. These operations are accomplished either by hand or by mechanical means—depending upon the nature of the food product.

FILLING: After the blanching or preliminary heat treatment most products are then filled into cans by mechanical fillers. These fillers are capable of maintaining accurate fills even at very high speeds. The washed, empty cans are conveyed to them; and the filled cans carried away automatically.

Products which do not lend themselves to mechanical filling are filled into the cans by hand.

In the case of many products, hot water or a hot dilute solution of salt and/or sugar is added to the food in the can.



Preheated peas entering machine which automatically fills them into cans, adds boiling hot brine and conveys them to the sealing machine



Unlike peas, some products after being filled into cans require this type of exhausting or preheating operation immediately before sealing

Certain fruits, such as peaches, pears, cherries, etc. may have a strong sugar solution added.

EXHAUSTING OR PREHEATING: This is the operation most commonly used in commercial canning not only to expel gases from foods, but to also exclude air from the can. Oxygen and other gases present in a sealed tin container may react with the food and directly affect its quality and nutritive value. If present in large amounts, these gases may place undue strain on the container during the heat processing to which canned foods are later subjected.

Briefly, the exhausting operation is accomplished by mechanically passing the can containing the raw food through an "Exhaust Box" in which hot water or steam is placed to expand the food by heat and expel air and other gases contained in the food and in the head space area of the can.

With certain products the same effect is produced by preheating the food in a kettle or similar device, and filling into the

cans while still hot. With still other products the exhausting effect is produced by adding boiling water, syrup or brine to the food in the cans.

Modern canners appreciate that only by strict supervision and control of the exhausting operation can the quality and nutritive values of their products be maintained at a consistently high level.

SEALING: After exhausting, the filled cans are immediately conveyed to a closing or double-seaming machine which permanently double-seams the covers to the cans. (For detailed description of the sealing operation, see page 54.)

HEAT-PROCESSING: Except in the case of highly acid products, the processing operation involves exposure of the *sealed* containers to hot or boiling water, or to steam under pressure. This heat is maintained for the correct period of time required to cook the food and destroy pathogenic or spoilage organisms which may be present in the food.

COOLING: The last important operation in commercial canning is the cooling of the sealed can after the heat process.

Prompt and thorough cooling of the can's contents prevents undue softening of the texture and change in color of the food. Cooling also contracts the contents, producing a vacuum within the can.

After cooling, the cans are inspected and labeled and are *then* ready to enter channels for delivery to the consumer.



Sealed cans of food being lowered into a vertical retort or "pressure cooker" where they will be exposed to live steam for the time required to heat-process them

What makes canned foods keep?

For a complete understanding of the principles of food preservation, it is, of course, necessary to be familiar with the primary causes of food spoilage.

The spoilage of food is caused by microorganisms belonging to the plant world and known as yeasts, molds, and bacteria.

These microorganisms grow and flourish on foods which they use for their nutrition and thus support their life cycles. As a result of the rapid growth and reproduction of these organisms, the natural characteristics of the foods are changed chemically, physically, or both, so as to produce the condition commonly known as spoilage.

These organisms flourish only under favorable environmental conditions. But, like man, if the external circumstances to which they are exposed are unfavorable, they cannot survive.

Therein lies the underlying principle of all methods of food preservation—the development of conditions within a food, temporary or sustained, which are unfavorable to the life and growth of spoilage organisms. In commercial canning, carefully prepared raw foods are hermetically sealed in tin containers and subjected to elevated temperatures sufficiently high to produce an unfavorable environment for these organisms. Consequently, they are destroyed. The permanently sealed can then prevents reinfection of the food by spoilage organisms present in the air.

How long will canned foods keep?

Commercially canned foods *will keep indefinitely* without spoilage because the thorough heat processing to which all raw foods are subjected make environmental conditions within the food unfavorable for growth and reproduction of spoilage organisms.

The hermetic seal prevents reinfection from bacteria in the air. So, as long as nothing occurs to the can to cause leakage and permit bacteria to enter, canned foods will not spoil.

What is meant by "Vacuum Packed"?

"Vacuum Packed" indicates that the food has been placed in the can without, or with a minimum of brine, syrup, or other packing medium, and run through a vacuum sealing machine which *automatically draws out air in the process of sealing*. In the case of foods requiring heat processing for preservation this method eliminates the exhausting operation. With non-processed products which are affected by oxygen, coffee for example, the extraction of air from the can prevents oxidative effects on the contents.

ANSWERS TO COMMON QUESTIONS ABOUT CANNED FOODS

Is it safe to leave food in the open can?

Yes. The old belief that canned foods should be transferred to another container immediately after opening hasn't the slightest foundation of fact. Canned foods are subjected to thorough heat treatment which destroys pathogenic bacteria and the most resistant organisms causing food spoilage. Consequently, *the freshly opened can is the cleanest, most sanitary container in the average kitchen.*

That this fact is fully recognized by our government is indicated by the following quotation from a U. S. DEPARTMENT OF AGRICULTURE release:

"It is just as safe to keep canned food in the can it comes in—if the can is cool and covered—as it is to empty the food in another container."

"A few acid foods may dissolve a little iron from the can, but this is not harmful, not dangerous to health. Cans and foods are sterilized in the 'processing.' But the dish into which the food might be emptied is far from sterile. In other words, it is likely to have on it bacteria that cause food to spoil.

"Whether in the original can or in another container, the principal precautions for keeping food are—keep it cool and keep it covered."



Does rust on a can indicate spoilage?

No. Rust on the outside of the can does not injure the contents, unless the rust has penetrated the can and caused a leak. In the case of products containing little or NO liquid, leaks may not be so readily apparent. Therefore, bad rust spots, particularly at the seams, should be closely examined to make certain that the rust has not penetrated the metal far enough to make a hole.

It must be remembered that any puncture or leak breaks the air-tight seal of the sterilized container and exposes its contents to infection by bacteria or spoilage organisms present in the air. Under favorable conditions, these organisms will grow and reproduce very rapidly, causing the food to "spoil."

Therefore, if a leak or hole is found in a can, it becomes advisable to have the contents of that particular can approved by the Medical Officer for consumption.



Rust on a can rarely indicates spoilage of contents



Dents on a can do not necessarily indicate spoilage of contents

Is a dented can a sign of spoilage?

No. Unless the dent has caused a leak or hole in the container, it does not indicate that the contents of the can are

in bad condition. However, severe dents particularly near a seam should be closely inspected to make sure the seam hasn't been sprung. If a dent has caused leakage and the edible qualities of the food are in doubt, consult a Medical Officer regarding its condition.

How can you tell if the contents of the can are spoiled?

Before the can is opened, neither end of the can should be bulged, nor swelled. After the can has been opened, the contents may be judged as readily as any similar home-prepared food. If it gives off an objectionable or unfamiliar odor, the food should be looked upon with suspicion and checked by the Medical Officer before being used.



Are canned foods more apt to cause food poisoning than similar market varieties?

No. Canned foods manufactured by modern cannery practices are classed among the safest foods which reach the table. Canned foods are, of course, subject to regulations of the Federal Government. Furthermore, the leading canning states have laws, similar to the Federal Food and Drug Laws, with which the canner must comply.

What is "ptomaine poisoning"?

Strictly speaking, there is no such thing. For many years the diagnosis of "ptomaine poisoning" was used for digestive

illnesses of obscure origin. Because that term is not scientifically accurate, modern medical authorities now include these digestive disturbances under the general designation of "food poisoning."

Is there any danger from tin in the food?

The U. S. DEPARTMENT OF AGRICULTURE says: "Our own experimental work, involving the ingestion of far larger amounts of tin than any previously reported, and supported by the experimental evidence of other investigators, leads us to the conclusion that tin, in the amounts ordinarily found in canned foods and in the quantity which would be ingested in the ordinary individual diet, is for all practical purposes eliminated, and is not productive of harmful effects to the consumer of canned goods."

Does tin impart a taste to canned foods?

The taste of certain canned foods, sometimes described as "tinny," is due to small amounts of iron dissolved from the steel base of the can and not to tin. Traces of iron found in canned foods are, of course, entirely harmless.

Are preservatives used in canned foods?

No. Canned foods are preserved by heat-processing them in permanently sealed containers. This heat process destroys spoilage bacteria which might be present—the sealed container prevents reinfection by such organisms and thereby insures preservation of the food.

What causes the discoloration of the inside of some cans? Is it harmful?

Some foods contain sulphur which discolors the inside of the can just as sulphur in a cooked egg discolors silverware. The sulphide stain is entirely harmless.

NUTRITIVE QUALITIES OF CANNED FOODS

Are cooked fruits and vegetables prepared from market produce more nutritious than similar canned varieties?

As far as major food constituents such as protein, fat and carbohydrates are concerned, canned foods and cooked raw foods are practically identical; as an exception should be listed those products to which sugar or syrup was added during the canning procedure and which, consequently are higher in food energy values than the cooked market varieties unless equal amounts of sugar are added during their preparation.

As far as vitamins and minerals are concerned, modern canning practices embody many procedures which are designed to protect the vitamin and mineral contents of the food. These procedures give a degree of protection to these essential nutrients comparable to that obtained by the most modern and approved methods of home preparation.

The protective measures employed in commercial canning which combine to insure that vitamins and minerals in the foods are retained in high degree include the use of selected raw materials at the optimum state of maturity; large scale operations; prompt handling of the harvested crop; rapid inactivation of enzymes; removal of respiratory oxygen; exclusion of air to a maximum extent during canning; cooking with a minimum amount of liquid and retention of this liquid within the can in which the foods were cooked.

HOW TO USE CANNED FOODS

How should you open cans of food?

In garrison, use a wall or table opener whenever possible in place of meat cleavers as a safeguard against injury. For fruit juices and other liquids, a "quick-and-easy" opener is recommended for both garrison and field use.



*Use a table or wall opener
for foods*



*Use a "quick-and-easy" opener
for juices*

Should canned foods be cooked?

No. All canned foods with the exception of bacon have been thoroughly cooked in the canning process and require no cooking in the mess. They are ready to eat just as they come from the can. Canned foods, therefore, should *never* be boiled or heated longer than necessary. Prolonged heating or boiling tends to destroy their flavor and, in some instances, results in the loss of nutritive values so carefully preserved during the canning process.



Cans being opened and contents drained for immediate heating

Should canned foods stand for a while before being heated and served?

No. Just as with any cooked food the longer you expose them to the air, the more easily the flavor is destroyed.

Do canned foods require seasoning?

Yes. Because canned foods must suit so many tastes, very little seasoning has been added, except in the case of sugar syrups added to fruits. So treat them with salt, pepper, dressing, or sauces, to taste. In other words, the right way to prepare canned foods is to consider them exactly as fresh foods—except for the fact that they've already been cooked.

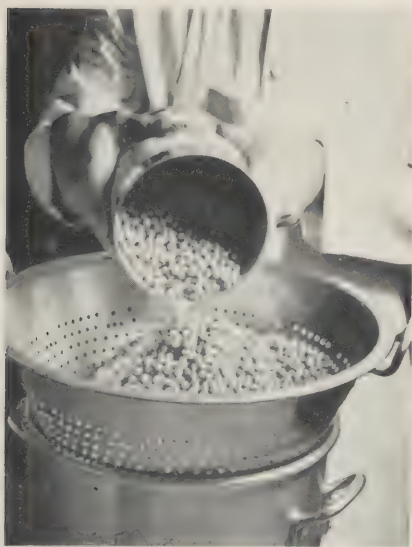


What is the liquid in the can?

It is the water in which the food is cooked. It may be seasoned with some salt, sugar, or both. It may also contain soluble food components such as certain minerals and vitamins which have been extracted from the food. Consequently it should not be wasted.

How can the liquid in the can be used?

Whenever possible it should be prepared back into the food. In the case of vegetables, this can be done in the following way: First drain them, boil the liquid to reduce the amount to about half, and then add the vegetables just long enough to heat them fully.



*Drain the liquid into a stock pot,
and boil to reduce the amount*



*Add vegetable and heat
quickly*

But even if you don't always find time to cook this liquid back into the food, it should still be saved. It can be used to advantage for soup stocks, extra flavoring for soups, gravies, sauces, or for the coloring of salads, especially those made with gelatin.

Should food be heated in cans?

It is always better to remove food from the can to a utensil before heating. In the field, however, where facilities are sometimes limited, it may be necessary to heat the food in the can.



*Heated can being punctured
before opening*

When such an occasion arises, the unopened cans should be heated in boiling water, making sure that the water is always kept at a level close to the top of the cans. *Never permit the water to boil away, because dry heat (as in oven or dry pan) will produce enough pressure in the cans to burst them.*

When cans of food are heated in this manner, always punch a hole in the tops of the cans *before* opening them. This will release the internal pressure built up within the sealed containers due to expansion of their contents. As shown in the accompanying illustration, it is recommended that a towel be wrapped around the top area of the can where hole is to be punched as a safeguard against possible burns from heated contents spurting through the punched hole.

Never heat cans of food by placing them in direct contact with fire unless it is absolutely necessary, and then *ALWAYS* be sure to puncture the top of each can in several places before placing them in contact with any heat.

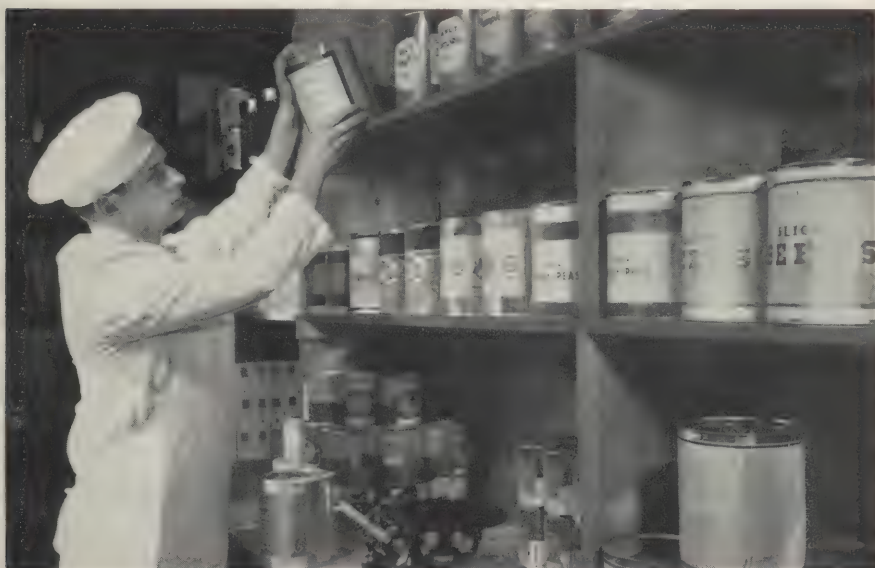
HOW TO STORE CANNED FOODS

What is the RIGHT way to store canned foods?

To store canned foods right, the following points should be considered:

1. *Dry storage with good ventilation.* Tin cans when exposed to dampness are susceptible to rust. It should also be borne in mind that corrugated cartons in which many canned foods are shipped are not intended to withstand continued dampness, water soaking or unfavorable atmospheric conditions. Therefore, canned foods, whether they are packed in cartons or not, should always be stored in as dry a place as possible.

2. *Cool storage.* It is also advisable to keep canned foods in a moderately cool or cold, but not freezing temperature. The ideal would be approximately 50° F.



What is the WRONG way to store canned foods?

The wrong way to store canned foods is to leave them near steam pipes, kitchen ranges, or in contact with damp ground.

Does freezing harm canned foods?

The freezing of canned foods does not render them unwholesome, and usually does not detract from their appearance. In fact, many delicious desserts can be prepared by freezing canned fruits.

With some canned foods of creamy consistency, freezing may cause a curdling or separation of the water and the food. The normal appearance of such products is usually restored by gradual warming.

SECTION 2

On the following pages, you will find a series of charts designed to simplify the task of calculating average number of servings per can and cost per serving of any given canned food product.

AVERAGE NUMBER OF SERVINGS

To determine the average number of servings, simply refer to the alphabetical list of products given in the charts shown on pages 32 to 43 and find the particular product and can size you are working with. The average number of servings for that item will be found on the opposite page.

COST PER SERVING

Now if you desire to know the cost per serving, simply turn to the charts given on pages 44 to 46 and locate the cost figure given in column 1 or 2 which comes closest to representing the price paid for that particular product. All you do then is refer to the column representing the number of servings to be made and presto, you have the cost per serving to a fraction of a cent.

FOOD PRODUCT	Size of Can	Net Weight
Apple Butter	No. 1 Tall	1 lb.
Apple Butter	No. 10	7 lbs. 3 oz.
Apples, Sliced	No. 2	1 lb. 2 oz.
Apples, Sliced	No. 2½	1 lb. 10 oz.
Apples, Sliced	No. 10	6 lbs.
Applesauce	No. 2	1 lb. 4 oz.
Applesauce	No. 2½	1 lb. 13 oz.
Applesauce	No. 10	6 lbs. 11 oz.
Apricots, Halves	No. 2½	1 lb. 14 oz.
Apricots, Halves	No. 10	6 lbs. 12 oz.
Asparagus	No. 303	1 lb.
Asparagus	No. 1 sq.	1 lb.
Asparagus	No. 2	1 lb. 3 oz.
Asparagus	No. 2½	1 lb. 12 oz.
Asparagus	No. 2½ sq.	1 lb. 15 oz.
Asparagus	No. 10	6 lbs. 7 oz.
Beans, w/pork	No. 1 East	11 oz.
Beans, w/pork	No. 1 Tall	1 lb.
Beans, w/pork	No. 2½	1 lb. 14 oz.
Beans, w/pork	No. 10	6 lbs. 12 oz.
Beans, Lima	No. 2	1 lb. 4 oz.
Beans, Lima	No. 10	6 lbs. 9 oz.
Beans, Red Kidney	No. 2	1 lb. 4 oz.
Beans, Red Kidney	No. 10	6 lbs. 12 oz.
Beans, Stringless, Cut/Whole	No. 2	1 lb. 3 oz.
Beans, Stringless, Cut/Whole	No. 10	6 lbs. 5 oz.
Beets, Sliced/Quartered	No. 2	1 lb. 4 oz.
Beets, Sliced/Quartered	No. 10	6 lbs. 8 oz.

* Not recommended—size of portion inadequate

AVERAGE NUMBER OF SERVINGS

3 oz. portions	4 oz. portions	5 oz. portions	Portions governed by number of pieces
5	4	3	.....
38	28	23	.....
6	4	3	.....
8	6	5	.....
32	24	19	.....
6	5	4	.....
9	7	5	.....
35	26	21	.....
..	..	..	7 (3 pieces per portion)
..	..	..	28 (3 pieces per portion)
..	..	..	4 (6 pieces per portion)
..	..	..	4 (6 pieces per portion)
..	..	..	4 (6 pieces per portion)
..	..	..	6 (6 pieces per portion)
..	..	..	6 (6 pieces per portion)
..	..	..	24 (6 pieces per portion)
3	2	2	.....
5	4	3	.....
10*	7	6	.....
36*	27	21	.....
6	5	4	.....
35	26	21	.....
6	5	4	.....
36*	27	21	.....
6	4	3	.....
33	25	20	.....
6	5	4	.....
34	26	20	.....

FOOD PRODUCT	Size of Can	Net Weight
Beets	No. 2½	1 lb. 12 oz.
Blackberries	No. 2	1 lb. 4 oz.
Blackberries	No. 10	6 lbs. 10 oz.
Blueberries	No. 2	1 lb. 4 oz.
Blueberries	No. 10	6 lbs. 6 oz.
Brussels Sprouts	No. 2	1 lb. 3 oz.
Cabbage	No. 2½	1 lb. 11 oz.
Cabbage	No. 10	6 lbs. 3 oz.
Carrots	No. 2	1 lb. 4 oz.
Carrots	No. 10	6 lbs. 8 oz.
Catsup, Tomato	No. 10	7 lbs.
Cherries, Red Sour Pitted	No. 2	1 lb. 4 oz.
Cherries, Red Sour Pitted	No. 10	6 lbs. 11 oz.
Cherries, Sweet	No. 2	1 lb. 4 oz.
Cherries, Sweet	No. 2½	1 lb. 14 oz.
Cherries, Sweet	No. 10	6 lbs. 12 oz.
Chili Con Carne	No. 10	6 lbs. 11 oz.
Corn	No. 2	1 lb. 4 oz.
Corn	No. 10	6 lbs. 12 oz.
Corned Beef Hash	.....	24 oz.
Corned Beef Hash	.....	5 lbs. 8 oz.
Corned Beef, Sliced	.....	12 oz.
Corned Beef, Sliced	.....	6 lbs.
Crab Meat	.....	6½ oz.
Cranberry Sauce	No. 2	1 lb. 6 oz.
Figs, Kadota	No. 1 tall	1 lb. 1 oz.
Figs, Kadota	No. 2½	1 lb. 15 oz.
Figs, Kadota	No. 10	7 lbs.

* Not recommended—size of portion inadequate

AVERAGE NUMBER OF SERVINGS

3 oz. portions	4 oz. portions	5 oz. portions	Portions governed by number of pieces
9*	7	5	.....
6	5	4	.....
35*	26	21	.....
6*	5	4	.....
34*	25	20	.....
..	..	..	4 (6 pieces per portion)
9	6	5	.....
33	24	19	.....
6	5	4	.....
34	26	20	.....
..	..	..	60
6	5	4	.....
35	26	21	.....
..	..	..	4 (11 pieces per portion)
..	..	..	5 (11 pieces per portion)
..	..	..	30 (11 pieces per portion)
36*	27	21	.....
6	5	4	.....
36	27	21	.....
8*	6	4	.....
29*	22	17	.....
..	..	..	4 (2 pieces per portion)
..	..	..	30 (2 pieces per portion)
..	..	..	4
..	..	..	11
..	..	..	4 (3 pieces per portion)
..	..	..	6 (3 pieces per portion)
..	..	..	37 (3 pieces per portion)

FOOD PRODUCT	Size of Can	Net Weight
Fruit Cocktail } Fruit Salad }	No. 2½	1 lb. 14 oz.
Fruit Cocktail } Fruit Salad }	No. 10	6 lbs. 12 oz.
Grapefruit	No. 2	1 lb. 4 oz.
Grapefruit	No. 5	3 lbs. 9 oz.
Grapefruit	No. 10	6 lbs. 9 oz.
Grapefruit Juice	No. 2	1 pt. 2 fl. oz.
Grapefruit Juice	No. 10	3 qts.
Ham, Spiced (Pork prod.)	.....	12 oz.
Ham, Spiced (Pork prod.)	{ Sandwich Type Cans	6 lbs.
Hominy	No. 2½	1 lb. 13 oz.
Hominy	No. 10	6 lbs. 9 oz.
Loganberries	No. 2	1 lb. 5 oz.
Loganberries	No. 10	6 lbs. 14 oz.
Mayonnaise-Salad dressing	No. 10	3 qts.
Molasses, Sugar Cane	No. 10	3 qts.
Olives, Ripe: Extra Fancy	No. 10	4 lbs. 2 oz.
Olives, Ripe: Fancy	No. 10	4 lbs. 2 oz.
Olives, Ripe: Giant	No. 10	4 lbs. 2 oz.
Olives, Ripe: Jumbo	No. 10	4 lbs. 2 oz.
Olives, Ripe: Large	No. 10	4 lbs. 2 oz.
Orange Juice	No. 2	1 pt. 2 fl. oz.
Orange Juice	No. 10	3 qts.
Peaches, Clingstone Halves	No. 2½	1 lb. 14 oz.
Peaches, Clingstone Halves	No. 10	6 lbs. 12 oz.
Peaches, Freestone Halves	No. 2½	1 lb. 14 oz.
Peaches, Freestone Halves	No. 10	6 lbs. 12 oz.

* Not recommended—size of portion inadequate

AVERAGE NUMBER OF SERVINGS

3 oz. portions	4 oz. portions	5 oz. portions	Portions governed by number of pieces
10*	7	6	.....
36*	27	21	.....
..	..	..	3 (5 pieces per portion)
..	..	..	13 (5 pieces per portion)
..	..	..	26 (5 pieces per portion)
..	..	..	5
..	..	..	30
..	..	..	4 (2 pieces per portion)
..	..	..	30
9	7	5	.....
35*	26	21	.....
7*	5	4	.....
36*	27	22	.....
..	..	..	100
..	..	..	30
..	..	..	90 (4 pieces per portion)
..	..	..	72 (5 pieces per portion)
..	..	..	80 (3 pieces per portion)
..	..	..	90 (2 pieces per portion)
..	..	..	71 (6 pieces per portion)
..	..	..	5
..	..	..	30
..	..	..	5 (1 piece per portion)
..	..	..	33 (1 piece per portion)
..	..	..	4 (1 piece per portion)
..	..	..	25 (1 piece per portion)

FOOD PRODUCT	Size of Can	Net Weight
Peanut Butter	.....	5 lbs.
Pears	No. 2	1 lb. 4 oz.
Pears	No. 2½	1 lb. 13 oz.
Pears, Bartlett	No. 10	6 lbs. 10 oz.
Peas	No. 2	1 lb. 4 oz.
Peas	No. 10	6 lbs. 9 oz.
Pickles: Halves	No. 10	6 lbs. 15 oz.
Pickles: Med. Burr Gherkins	No. 10	6 lbs. 15 oz.
Pickles: Midget Burr Gherkins	No. 10	6 lbs. 15 oz.
Pickles: Small Burr Gherkins	No. 10	6 lbs. 15 oz.
Pickles: Tiny Burr Gherkins	No. 10	6 lbs. 15 oz.
Pickles: Mixed	No. 10	6 lbs. 15 oz.
Pickles: Quarters	No. 10	6 lbs. 15 oz.
Pickles: Sweet Gherkins	No. 10	6 lbs. 15 oz.
Pickles: Sweet Midgets	No. 10	6 lbs. 15 oz.
Pickles: Sweet Small	No. 10	6 lbs. 15 oz.
Pineapple, Crushed	No. 2	1 lb. 6 oz.
Pineapple, Crushed	No. 2½	2 lbs. 3 oz.
Pineapple, Crushed	No. 10	7 lbs. 12 oz.
Pineapple, Sliced	No. 2	1 lb. 4 oz.
Pineapple, Sliced	No. 2½	1 lb. 14 oz.
Pineapple, Sliced	No. 10	6 lbs. 12 oz.
Pineapple Juice	No. 2	1 pt. 2 fl. oz.
Pineapple Juice	No. 10	3 qts.
Plums	No. 10	6 lbs. 14 oz.
Potatoes, Sweet, Whole/Cut	No. 2½	1 lb. 13 oz.
Potatoes, Sweet, Whole/Cut	No. 10	6 lbs. 6 oz.
Preserves: Apricot	No. 2	1 lb. 8 oz.

* Not recommended—size of portion inadequate

AVERAGE NUMBER OF SERVINGS

3 oz. portions	4 oz. portions	5 oz. portions	Portions governed by number of pieces
..	40
..	4 (2 pieces per portion)
..	8 (1 piece per portion)
..	28 (1 piece per portion)
6	5	4	.....
35	26	21	.....
..	130 (1 piece per portion)
..	170 (1 piece per portion)
..	160 (2 pieces per portion)
..	215 (1 piece per portion)
..	210 (2 pieces per portion)
..	90
..	130 (1 piece per portion)
..	100 (1 piece per portion)
..	180 (1 piece per portion)
..	120 (½ piece per portion)
7	5	4	.....
10*	7	6	.....
41	31	24	.....
..	5 (2 pieces per portion)
..	8 (1 piece per portion)
..	28 (1 piece per portion)
..	5
..	30
..	19 (2 pieces per portion)
..	5 (2 pieces per portion)
..	26 (2 pieces per portion)
..	15

FOOD PRODUCT	Size of Can	Net Weight
Preserves: Apricot	No. 10	8 lbs.
Preserves: Blackberry	No. 2	1 lb. 8 oz.
Preserves: Blackberry	No. 10	8 lbs.
Preserves: Cherry-red	No. 2	1 lb. 8 oz.
Preserves: Cherry-red	No. 10	8 lbs.
Preserves: Grape	No. 2	1 lb. 8 oz.
Preserves: Grape	No. 10	8 lbs.
Preserves: Loganberry	No. 2	1 lb. 8 oz.
Preserves: Loganberry	No. 10	8 lbs.
Preserves: Peach	No. 2	1 lb. 8 oz.
Preserves: Peach	No. 10	8 lbs.
Preserves: Raspberry-red	No. 2	1 lb. 8 oz.
Preserves: Raspberry-red	No. 10	8 lbs.
Preserves: Strawberry	No. 2	1 lb. 8 oz.
Preserves: Strawberry	No. 10	8 lbs.
Prunes, Fresh	No. 10	6 lbs. 12 oz.
Prunes, Prepared	No. 2½	1 lb. 14 oz.
Prunes, Prepared	No. 10	6 lbs. 14 oz.
Pumpkin	No. 2½	1 lb. 13 oz.
Pumpkin	No. 10	6 lbs. 10 oz.
Raspberries, Black	No. 2	1 lb. 4 oz.
Raspberries, Black	No. 10	6 lbs. 10 oz.
Raspberries, Red	No. 2	1 lb. 5 oz.
Raspberries, Red	No. 10	6 lbs. 12 oz.
Rhubarb	No. 10	6 lbs. 9 oz.
Salmon	1 lb. Flat	15½ oz.
Salmon	1 lb. Tall	1 lb.
Sardines	No. ¼ oil	3¼ oz.

* *Not recommended—size of portion inadequate*

AVERAGE NUMBER OF SERVINGS

3 oz. portions	4 oz. portions	5 oz. portions	Portions governed by number of pieces
..	..	..	85
..	..	..	15
..	..	..	85
..	..	..	15
..	..	..	85
..	..	..	15
..	..	..	85
..	..	..	15
..	..	..	85
..	..	..	15
..	..	..	85
..	..	..	15
..	..	..	85
..	..	..	15
..	..	..	85
..	..	..	15
..	..	..	85
..	..	..	27 (3 pieces per portion)
..	..	..	6 (3 pieces per portion)
..	..	..	35 (5 pieces per portion)
9*	7	5	.....
35*	26	21	.....
6*	5	4	.....
35*	26	21	.....
7*	5	4	.....
36*	27	21	.....
35*	26	21	.....
..	..	..	4
..	..	..	4
..	..	..	4 (4 pieces per portion)

FOOD PRODUCT	Size of Can	Net Weight
Sardines	No. 1 Oval	15 oz.
Sauerkraut	No. 2½	1 lb. 11 oz.
Sauerkraut	No. 10	6 lbs. 3 oz.
Shrimp (dry pack)	{No. 1 East or Squat	5 oz.
Shrimp (wet pack)	{No. 1 East or Squat	5¾ oz.
Soups: Bean	No. 1 Tall	1 lb.
Soups: Beef	No. 1 Tall	1 lb.
Soups: Tomato	No. 1 Tall	1 lb.
Soups: Vegetable	No. 1 Tall	1 lb.
Spinach	No. 2½	1 lb. 11 oz.
Spinach	No. 10	6 lbs. 2 oz.
Syrup, Blended Corn and Refiners	No. 10	3 qts.
Syrup, Cane Sugar and Refiners	No. 10	3 qts.
Syrup, Maple	No. 10	3 qts.
Tomatoes	No. 2	1 lb. 3 oz.
Tomatoes	No. 2½	1 lb. 12 oz.
Tomatoes	No. 10	6 lbs. 6 oz.
Tomato Juice	No. 2	1 pt. 2 fl. oz.
Tomato Juice	No. 10	3 qts.
Tomato, Puree	No. 10	6 lbs. 9 oz.
Tuna	No. ½	7 oz.
Tuna	No. 1	13 oz.
Vegetables, Mixed	No. 10	6 lbs. 8 oz.
Vegetables for Salad	No. 2	1 lb. 4 oz.

* Not recommended—size of portion inadequate

AVERAGE NUMBER OF SERVINGS

3 oz. portions	4 oz. portions	5 oz. portions	Portions governed by number of pieces
..	..	..	15 (4 pieces per portion)
9*	6	5	.....
33*	24	19	.....
..	..	..	4
..	..	..	4
..	..	..	2
..	..	..	2
..	..	..	2
..	..	..	2
9*	6	5	.....
32*	24	19	.....
..	..	..	30
..	..	..	30
..	..	..	30
6	4	3	.....
9	7	5	.....
34	25	20	.....
..	..	..	5
..	..	..	30
35	26	21	.....
..	..	..	3
..	..	..	5
34*	26	20	.....
6	5	4	.....

COST PER DOZ. CANS	COST PER CAN	COST PER SERVING							
		2	3	4	5	6	7	8	9
		<i>Portions</i>	<i>Portions</i>	<i>Portions</i>	<i>Portions</i>	<i>Portions</i>	<i>Portions</i>	<i>Portions</i>	<i>Portions</i>
.50	.04	.020	.013	.010	.008	.007	.006	.005	.004
.75	.06	.030	.020	.015	.012	.010	.008	.007	.007
1.00	.08	.040	.026	.020	.016	.013	.011	.010	.009
1.25	.10	.050	.033	.025	.020	.016	.014	.012	.011
1.50	.12	.060	.040	.030	.024	.020	.017	.015	.013
1.75	.14	.070	.046	.035	.028	.023	.020	.017	.015
2.00	.16	.080	.053	.040	.032	.026	.022	.020	.017
2.25	.18	.090	.060	.045	.036	.030	.025	.022	.020
2.50	.20	.100	.066	.050	.040	.033	.028	.025	.022
2.75	.22	.110	.073	.055	.044	.036	.031	.027	.024
3.00	.25	.125	.083	.062	.050	.041	.035	.031	.027
3.25	.27	.135	.090	.067	.054	.045	.038	.033	.030
3.50	.29	.145	.096	.072	.058	.048	.041	.036	.032
		20	23	26	29	32	36	40	45
		<i>Portions</i>	<i>Portions</i>	<i>Portions</i>	<i>Portions</i>	<i>Portions</i>	<i>Portions</i>	<i>Portions</i>	<i>Portions</i>
3.75	.31	.015	.013	.012	.011	.010	.009	.008	.007
4.00	.33	.016	.014	.013	.011	.010	.009	.008	.007
4.25	.35	.018	.015	.013	.012	.011	.010	.009	.008
4.50	.38	.019	.016	.015	.013	.012	.010	.010	.008
4.75	.40	.020	.017	.015	.014	.012	.011	.010	.009
5.00	.42	.021	.018	.016	.014	.013	.011	.011	.009
5.25	.44	.022	.019	.017	.015	.014	.012	.011	.010
5.50	.46	.023	.020	.018	.016	.014	.013	.012	.010

COST PER DOZ. CANS	COST PER CAN	COST PER SERVING							
		20 <i>Portions</i>	23 <i>Portions</i>	26 <i>Portions</i>	29 <i>Portions</i>	32 <i>Portions</i>	36 <i>Portions</i>	40 <i>Portions</i>	45 <i>Portions</i>
5.75	.48	.024	.021	.018	.017	.015	.014	.012	.011
6.00	.50	.025	.022	.019	.017	.016	.014	.013	.011
6.25	.52	.026	.023	.020	.018	.016	.015	.013	.011
6.50	.54	.027	.023	.021	.019	.017	.015	.014	.012
6.75	.56	.028	.024	.022	.020	.017	.016	.014	.012
7.00	.58	.029	.025	.023	.020	.018	.016	.015	.013
7.25	.60	.030	.026	.023	.021	.019	.017	.015	.013
7.50	.63	.031	.027	.024	.022	.020	.017	.016	.014
7.75	.65	.032	.028	.025	.022	.020	.018	.016	.014
8.00	.67	.033	.029	.026	.023	.021	.019	.017	.015
8.25	.69	.034	.030	.026	.023	.021	.019	.017	.015
8.50	.71	.035	.031	.027	.024	.022	.020	.018	.016
8.75	.73	.036	.032	.028	.025	.023	.020	.018	.016
9.00	.75	.037	.033	.029	.026	.023	.021	.019	.017
9.25	.77	.038	.034	.030	.027	.024	.022	.019	.017
9.50	.79	.039	.034	.030	.027	.025	.022	.020	.018
9.75	.81	.040	.035	.031	.028	.025	.023	.020	.018
10.00	.83	.041	.036	.032	.029	.026	.023	.021	.019
10.25	.85	.042	.037	.033	.029	.026	.024	.021	.019
10.50	.88	.044	.038	.034	.031	.027	.025	.022	.020
10.75	.90	.045	.039	.035	.031	.028	.025	.023	.020
11.00	.92	.046	.040	.035	.032	.029	.026	.023	.020
11.25	.94	.047	.041	.036	.033	.029	.026	.024	.021

COST PER DOZ. CANS	COST PER CAN	COST PER SERVING							
		20 <i>Portions</i>	23 <i>Portions</i>	26 <i>Portions</i>	29 <i>Portions</i>	32 <i>Portions</i>	36 <i>Portions</i>	40 <i>Portions</i>	45 <i>Portions</i>
11.50	.96	.048	.042	.037	.033	.030	.027	.024	.021
11.75	.98	.049	.043	.038	.034	.031	.027	.025	.022
12.00	1.00	.050	.043	.039	.034	.031	.028	.025	.022
12.25	1.02	.051	.044	.040	.035	.032	.029	.026	.023
12.50	1.04	.052	.045	.040	.036	.033	.029	.026	.023
12.75	1.06	.053	.046	.041	.037	.033	.030	.027	.024
13.00	1.08	.054	.047	.042	.037	.034	.030	.027	.024
13.25	1.10	.055	.048	.043	.038	.034	.031	.028	.024
13.50	1.13	.056	.049	.043	.039	.035	.032	.028	.025
13.75	1.15	.057	.050	.044	.040	.036	.032	.029	.025
14.00	1.17	.058	.051	.045	.041	.036	.033	.029	.026
14.25	1.19	.059	.052	.046	.041	.037	.033	.029	.026
14.50	1.21	.060	.053	.046	.042	.038	.034	.030	.027
14.75	1.23	.061	.053	.047	.042	.038	.034	.031	.027
15.00	1.25	.062	.054	.048	.043	.039	.035	.031	.028
15.25	1.27	.063	.055	.049	.044	.040	.035	.032	.028
15.50	1.29	.064	.056	.050	.045	.040	.036	.032	.029

SECTION 3

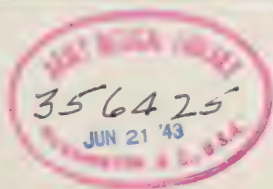
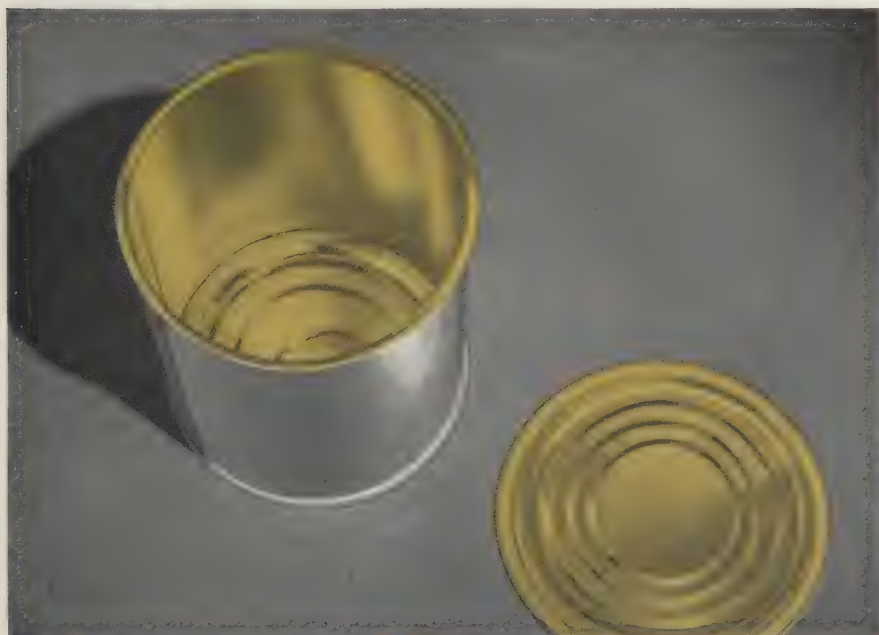
A WORD ABOUT TIN CANS

What are tin cans made of?

Tin cans aren't really made of tin as the name implies. Actually, these modern metal containers are fabricated from sheets of steel bearing a coating of tin so thin it amounts to less than 1.5% of the finished can.

Why are some cans enamel lined?

Enamel lined cans are necessary with some kinds of food to retain an attractive appearance—for example, to preserve the color of red fruits. However, they are not necessary to can a wholesome product.



How are tin cans made?

Cans are made on a series of machines collectively known as a "can line." Sheets of tin-plate are first fed by hand into a slitter (Illus. 1) which cuts them into "body blanks" from which the can body is later formed. These body blanks are then fed into the bodymaker (Illus. 2) where a sequence of automatic operations is performed to complete the cylindrical body of the can.

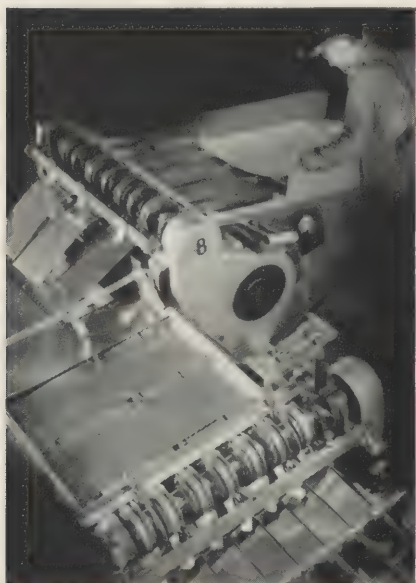


Illustration 1



Illustration 2

The first station on the bodymaker notches the body blanks (Illus. 3). They are then hooked (Illus. 4) and the hooked blanks formed around the bodymaker (Illus. 5) and bumped to form the side seam of the can (Illus. 6).

The formed body then passes over fluxing wheels and then to the solder bath where revolving rolls apply solder to the outside of the side seam (Illus. 7). The soldered body is then led to the flanger, where the ends are curled by special hammers to form so-called flanges (Illus. 8).



Illustration 3



Illustration 4



Illustration 5



Illustration 6



Illustration 7



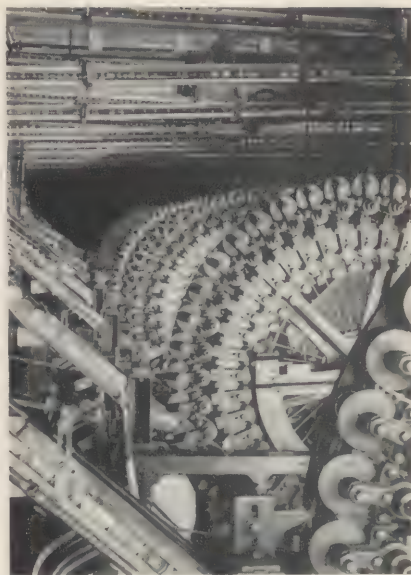
Illustration 8

*Illustration 9**Illustration 10*

At the same time that the can bodies are being fabricated, the ends are also being made by cutting sheets of tin plate to the proper size with scroll shears (Illus. 9) and punching the ends out in a press (Illus. 10). The ends then pass

through a machine which curls their outer edges (Illus. 11). Curled ends then go to the compound liner where a continuous ribbon of sealing "compound," a rubber gasket material, is placed within the curl (Illus. 12). Next a special machine dries the compound and the covers are complete. This compound serves as a sealing medium between metal curl of cover and metal flange of can body. (Relationship of parts shown in Illus. 13.)

*Illustration 11**Illustration 12**Illustration 13*

*Illustration 14**Illustration 15*

After the flanged bodies leave the “flanger,” they proceed to the “doubleseamer” (Illus. 14) where one end is applied. This operation is essentially the same as that used in the canning factory for sealing on the top of the cans and is fully described on the next page. After one end is sealed on, the cans go to a “testing machine” (Illus. 15) which by means of air pressure tests them for leaks and automatically discards any that are faulty. After testing, the cans are loaded into shipping cartons or directly into paper-lined box cars (Illus. 16) for shipment. The covers are packed separately in fibre tubes and shipped with the cans.

*Illustration 16*

How are cans sealed?

Cans are sealed on a "doubleseamer," also called a *closing machine*, in a sequence of operations described as follows:

The can body is brought into contact with the cover so that the body flange rests on the compound previously applied just inside the cover curl (Illus. 17). The next operation rolls the cover curl down and in around the body flange which in turn is being forced out and down inside the cover curl (Illus. 18). The rolls then flatten out these several layers of plate into a finished doubleseam (Illus. 19). The rubber compound originally present on the cover supplies the material between the layers of metal necessary to insure a permanent or hermetic seal. (Illus. 20 shows in cross section a sealed sanitary can as it comes to the consumer.)



Illustration 17



Illustration 18



Illustration 19

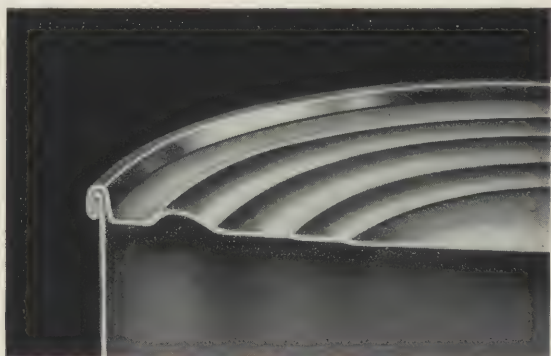


Illustration 20

SECTION 4

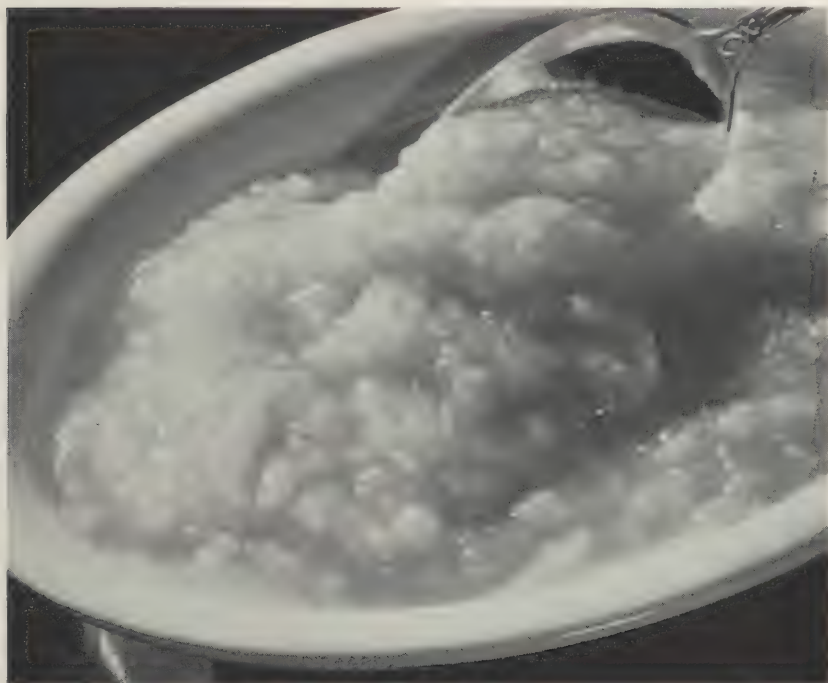
This section is devoted to a factual presentation of useful information about 34 of the commonest canned foods. Each product is illustrated just as it comes from the can and described in terms of its preparation and canning, its nutritive values, its various styles and the most popular use of each style.

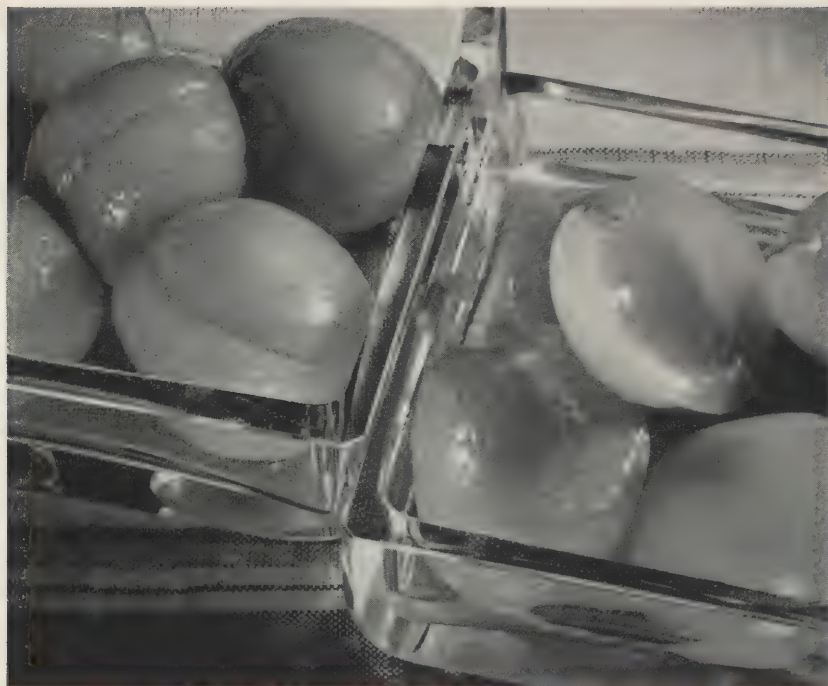
APPLESAUCE

PREPARATION AND CANNING • Using sound, ripe apples, most canners combine two or more varieties, each possessing a different flavor, for canned applesauce. The result is a delicious blend of flavors which would be difficult to achieve in "home-made" applesauce. The product is prepared by peeling, coring, and trimming the apples before they are cut or crushed into small pieces. The sauce is then cooked lightly with sugar and usually some spices. It is passed through a screen to give a uniform, grainy appearance, followed by sealing in cans, processing, and cooling.

DIETETIC VALUE • The chief nutritive value of canned applesauce is its carbohydrate content, the natural fruit sugars being enhanced by the sugar which is added. Its natural fruit acids produce a mildly laxative effect. The cellulose material it contains aids in increasing intestinal bulk.

USES • As a garnish served with pork or lamb roasts. Also as a fruit for breakfast or as a dessert for other meals. Can be used cold as a spread for bread or crackers. Can be used to make applesauce cake or applesauce pie.



*Whole peeled**Halves*

APRICOTS

PREPARATION AND CANNING • Most apricots used in canning are grown on the Pacific Coast. After picking they are quickly transported to canneries, graded for size, and then halved and pitted by hand. The bulk of the pack is not peeled, for the skin is tender and helps preserve the shape of the delicate halves. After the fruit is sorted and washed, the cans are filled as full as possible with the fruit and a sugar syrup added. The cans are then sealed and heat-processed. There are several grades of canned apricots, and the terms used to designate them indicate the size and quality of the fruit as well as the relative amounts of sugar in the syrup. The sweetest syrup is used in the *Fancy* grade, and the sweetness diminishes through the other grades—*Choice*, *Standard*, *Second* and *Pie*.

DIETETIC VALUE • Canned apricots are an excellent source of carotene or provitamin A, and their other principal contribution to the diet is carbohydrates.

USES • The sweeter packs are more commonly used for desserts or as a breakfast fruit. The others are useful for pies and cooked dishes.

BEETS

PREPARATION AND CANNING • The beet is an ancient vegetable, but, as used for modern canning, it is the result of years of improvement by horticulturists. Cannerymen demanded and obtained a dark red, evenly colored beet without the "woody" texture so commonly found in this root. These pedigreed beets for canning are pulled or dug from the ground, and the tops are usually removed in the field. At the canning plant the beets are graded roughly for size, thoroughly washed, and then steamed to facilitate peeling. Peeling is done either by hand or machine, after which the beets are again graded. Hand trimming is carried out before the beets are filled into cans. Various styles of cut beets are prepared by machines which dice, slice, or otherwise cut the larger beets. Beets are vacuum-packed (with a limited amount of liquid in the can), or packed in water containing a small quantity of salt.

DIETETIC VALUE • Beets are valued for their content of carbohydrates and fiber. They also contain iron.

USES • Beets are one of the most important food-roots and one of the most attractive table vegetables. They are delicious when served hot as a supplementary vegetable, cold in salads, pickled, or as a relish.

*Shoestring**Whole (top)**Sliced (bottom)**Diced*



Loganberries Blackberries (top) Raspberries (bottom) Strawberries

BERRIES

PREPARATION AND CANNING • Berries are gathered as they ripen and taken immediately to the canneries. There they are carefully inspected, and all unsound berries and any leaves or stems are removed. After sorting they are given a thorough washing and filled into cans by hand. They are packed in the following grades: *Fancy*, *Choice*, *Standard* and *Water or Pie Pack*. Heavy sugar syrup is used for the *Fancy* grade, and the amount of sugar, as well as the size and uniformity of the fruit, decreases with the grade designations. The cans are sealed after the proper syrup has been added, and the contents heat-processed to insure preservation. Many varieties of berries are packed—including the following:

<i>Blackberries</i>	<i>Red Raspberries</i>	<i>Loganberries</i>	<i>Strawberries</i>
<i>Boysenberries</i>	<i>Black Raspberries</i>	<i>Gooseberries</i>	<i>Youngberries</i>
	<i>Blueberries</i>		

DIETETIC VALUE • The principal nutritional contribution of berries is their carbohydrate content in the form of natural fruit sugars, supplemented by the sugar in the syrup in which they are packed.

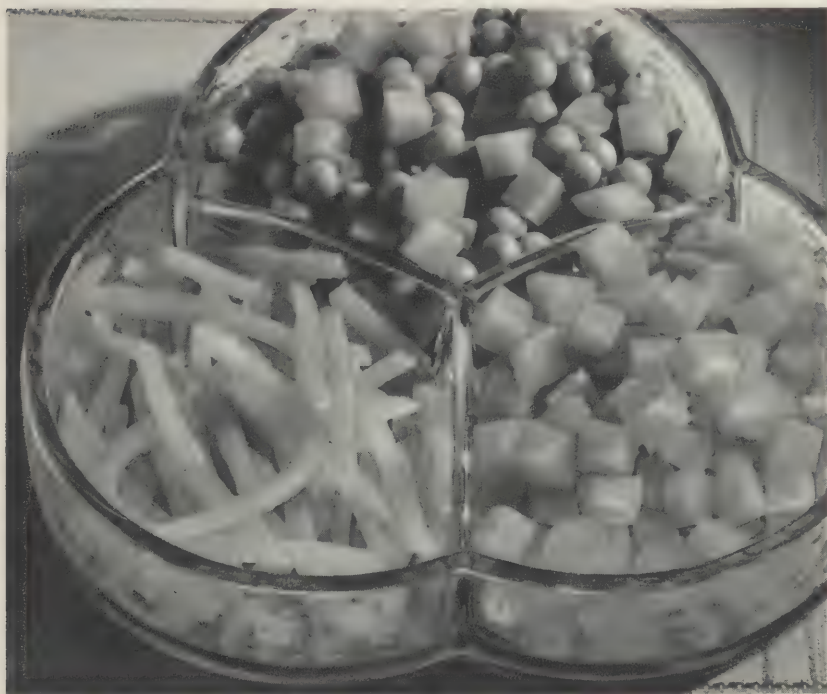
USES • Canned berries have the same variety of uses that fresh berries have. They may be served as a breakfast fruit, or for dessert. They are also excellent in pies, puddings, or fruit sauces.

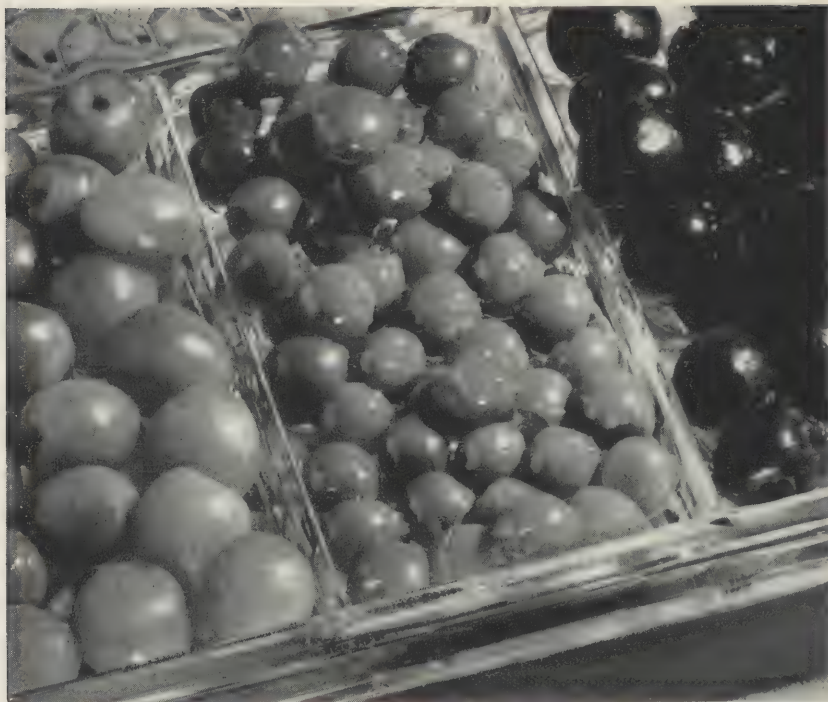
CARROTS

PREPARATION AND CANNING • Carrots used for canning are the yellow garden variety. They are harvested and the tops removed by machine either in the field or at the cannery. The carrots are then washed, followed by blanching in steam or hot water to facilitate peeling. After peeling they are trimmed by hand. Carrots are packed in several different styles, but *diced* carrots are the most common. They are cut into quarter- or three-eighths-inch cubes, and are frequently canned in combination with peas. Carrots are also *sliced* uniformly, and sometimes *quartered*. *Whole* carrots are small and tender and filled into cans by hand. All types are packed in water containing a little salt for seasoning. The cans are then sealed and heat-processed.

DIETETIC VALUE • Canned carrots are an excellent source of carotene, or provitamin A. They also contribute carbohydrates as well as fiber, which serves to increase intestinal bulk.

USES • Canned carrots are served in a variety of different ways—as a side dish and in soups or stews. Diced carrots are frequently used in vegetable salads.

*Shoestring**Carrots and Peas**Diced*

*Royal Anne**Red (pitted)**Bing (pitted)*

CHERRIES

PREPARATION AND CANNING • Red cherries are picked ripe without the stems and rushed to the cannery, where they are immediately chilled by immersion in cold water. This washes and firms the fruit so that the pitting machines remove pits cleanly. Before pitting, however, the fruit is passed over an inspection belt where defective cherries and extraneous matter such as stems and leaves are removed. After pitting, the fruit is carefully filled into cans, the weight checked, and sugar syrup added. These operations are followed by heating the open cans in hot water or steam to expel air, sealing, processing, and cooling. Sweet cherries such as *Royal Anne* and the darker types are packed in much the same way except that pits are not usually removed.

DIETETIC VALUE • The outstanding nutritive value of the cherry is its high content of natural fruit sugars. Canned cherries are a good source of provitamin A and also contain C.

USES • Canned sweet cherries are delicious as a dessert fruit served plain, and are excellent in gelatin or frozen desserts, or in salads. Red cherries are most frequently used for making pies, puddings, or sauces.

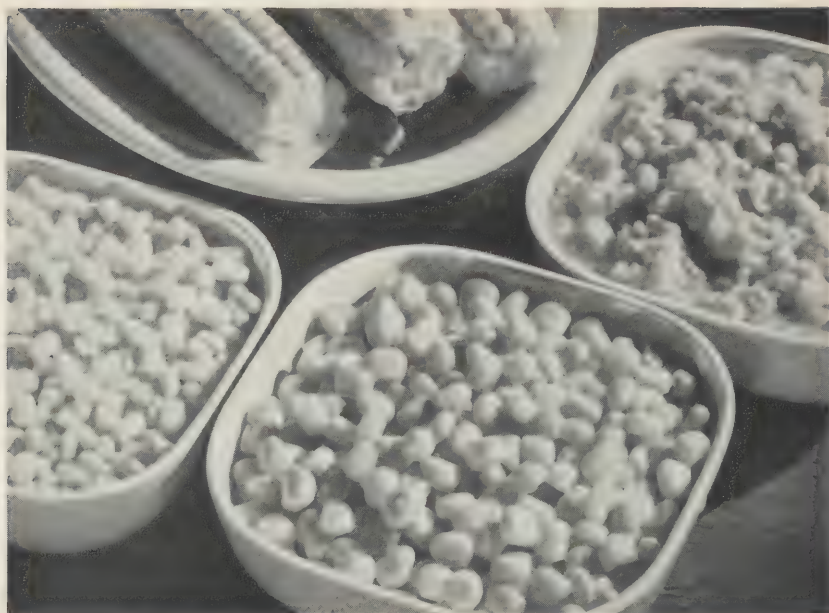
CHILI CON CARNE

PREPARATION AND CANNING • Chili con carne is a hot, spicy dish of Mexican origin. The name means *chili peppers in meat*. Chili peppers are one of the most noted of Mexican seasonings. In canned chili con carne, chili pepper is present in the powder form; other ingredients include meat, beans, garlic and other spices. The meat most frequently used is beef, although a blend of various meats may be used. Any one of several varieties of dried beans are useful for this product. The ingredients are pre-cooked separately; the meat is ground and mixed with spices to form the sauce, and the beans are soaked in water. Some packers fill each ingredient separately, others mix beans and sauce before filling the cans. The sealed cans are thoroughly cooked and cooled.

DIETETIC VALUE • Canned chili con carne is an excellent dish for relieving dietary monotony, and it supplies fats, proteins, and carbohydrates.

USES • Because it contains meat and vegetables, chili con carne is in itself a satisfying meal. It may be served in a host of different ways, either as a soup or a main dish. It is a good, easy-to-prepare supper dish; also fine for quick, hot lunches.





*White whole
kernel*

*Corn-on-the-cob
(top)*

*Yellow whole
kernel*

*Cream style
yellow*

CORN

PREPARATION AND CANNING • Two distinct types of corn are used for canning—white and yellow. *Country Gentleman*, *Evergreen*, and *Crosby* are varieties of white corn; *Golden Bantam*, *Yellow Bantam*, and hybrids of *Golden Bantam* are examples of the yellow varieties. Corn is canned in three different ways. *Cream style* results when the top of the kernel is cut off and the rest is scraped from the cob to give a creamy consistency. It is flavored with salt, sugar, and a little water. *Whole grain*, as its name indicates, is prepared by cutting the entire kernel from the cob and is also packed with water and seasoning. *Whole grain* corn is also vacuum-packed with a limited amount of water. The third type is *corn-on-the-cob*, available in the yellow types only, vacuum-packed with a limited amount of water in tall cans.

DIETETIC VALUE • Canned corn is a good source of food energy and supplies significant quantities of vitamin B₁. The yellow varieties also contain provitamin A in valuable amounts. Both varieties are essentially carbohydrate foods, although they also supply good amounts of protein and fat.

USES • The *cream style* canned corn is excellent for use in soups, puddings, or as a supplementary vegetable. *Whole grain* corn is also good as a supplementary vegetable, or sauteed with meats.

CORNERD BEEF AND CORNERD BEEF HASH

PREPARATION AND CANNING • The formulas used for preparing and curing cornerd beef vary considerably with different canners. In general, however, the following steps occur: Beef is cut from best quality carcasses and cured in a brine solution consisting of salt, saltpeter, sugar, and water. When properly cured, the meat is taken out and washed, cooked, trimmed to remove sinew, tendon, cartilage, and other objectionable parts; cut into strips; and fed into machines which fill the cans automatically. The filled cans are then sealed and processed. Cornerd beef hash usually contains about 51% cornerd beef, prepared as outlined above; 46% sound potatoes, peeled and boiled; and 3% sound onions, skinned and trimmed. The meat, potatoes, onions and some spices are placed in a cutter and chopped into small pieces. The mixture is then filled into cans, exhausted, sealed, and processed.

DIETETIC VALUE • Cornerd beef is an excellent source of animal proteins and fats, as well as a good source of certain members of the vitamin "B complex," especially Riboflavin and Nicotinic Acid. Cornerd beef hash contains all of the above properties, in addition to carbohydrates derived in substantial quantities from the potatoes present in this product.

USES • Cornerd beef makes a delicious meat course served hot with buttered or creamed cabbage, or sliced and covered with creole sauce. It is also tasty when served as a cold cut. Cornerd beef hash is popular as a breakfast dish served with poached eggs, and may also be used as stuffing for peppers or as a topping for sauerkraut pie.





EVAPORATED MILK

PREPARATION AND CANNING • There are, of course, two different types of canned milk—*evaporated* and *condensed*. In preparing *evaporated* milk about 60% of the water content is removed. The milk is homogenized—forced under pressure through a tiny aperture—a process which breaks up the fat particles so finely that they remain evenly distributed throughout the milk. This is followed by filling and sealing the cans, which are then subjected to a carefully controlled sterilization under steam pressure. *Condensed* milk also has some of its water removed and then is mixed with sugar. Preservation is effected by the high concentration of sugar.

DIETETIC VALUE • Canned milk contributes all the major nutritive values of the whole milk from which it is prepared. Like whole milk, it is high in protein, fat and carbohydrate; it is a valuable source of calcium, phosphorus, vitamin A and the factor formerly designated as vitamin G (riboflavin); and it also contains the P-P factor (nicotinic acid) and small amounts of vitamin B₁ (thiamin). Government standards assure that all canned evaporated milk contains “not less than 7.9% of milk fat and not less than 25.9% of total milk solids.”

USES • Since only water is removed, canned milk has almost as wide a variety of uses as bottled milk, and may be used in any recipe calling for milk. Whole milk is made by adding an equal quantity of water to the canned milk. In unopened cans, milk will keep indefinitely without refrigeration. *Condensed* milk, because of its added sugar content, has fewer uses than *evaporated* milk. It is, however, excellent in beverages, icings, pastries and ice cream.

FRUIT JUICES

PREPARATION AND CANNING • Canned grapefruit juice, orange juice, and pineapple juice are prepared from fully ripened fruit. The canneries are so close to the orchards and fields that the juices are squeezed and hermetically sealed in the clean cans within hours of harvesting. All fruit juices are pasteurized to preserve them for use in any season. Most canned grapefruit juice, because of its extreme tartness, has some sugar added. Orange juice seldom requires additional sugar—pineapple juice, never.

DIETETIC VALUE • Canned grapefruit and orange juices are famed as rich sources of vitamin C. Canned pineapple juice is a good source of vitamins C and B₁. All these juices furnish carbohydrates—acids and sugars—and, when packed unsweetened, may be considered low-caloric foods.

USES • All three juices are popular as appetizers before meals. They are excellent mixers and can be used in fruit sherbets or ices.





GRAPEFRUIT

PREPARATION AND CANNING • Delicious, tree-ripened grapefruit is used for canning. When it is brought to the cannery it is peeled and the inner pulp (called "rag") is removed. The fruit is carefully divided into its segments, which are then systematically arranged in the can to prevent damage of the delicate pieces during shipment. In modern canning operations, special precautions are observed in order to conserve in high degree the color, flavor, and vitamin content characteristic of the raw fruit.

DIETETIC VALUE • Perhaps the most outstanding food value of grapefruit is its high vitamin C content. Years of research have improved canning methods so much that canned grapefruit ranks among the richest sources of this vitamin. Other dietary contributions of this product are substantially those made by the fresh fruit, except that, when packed sweetened, the carbohydrate content is increased.

USES • Canned grapefruit has many uses—for breakfast, for salads, fruit cocktails, desserts, and grilled with meats for main course dishes.

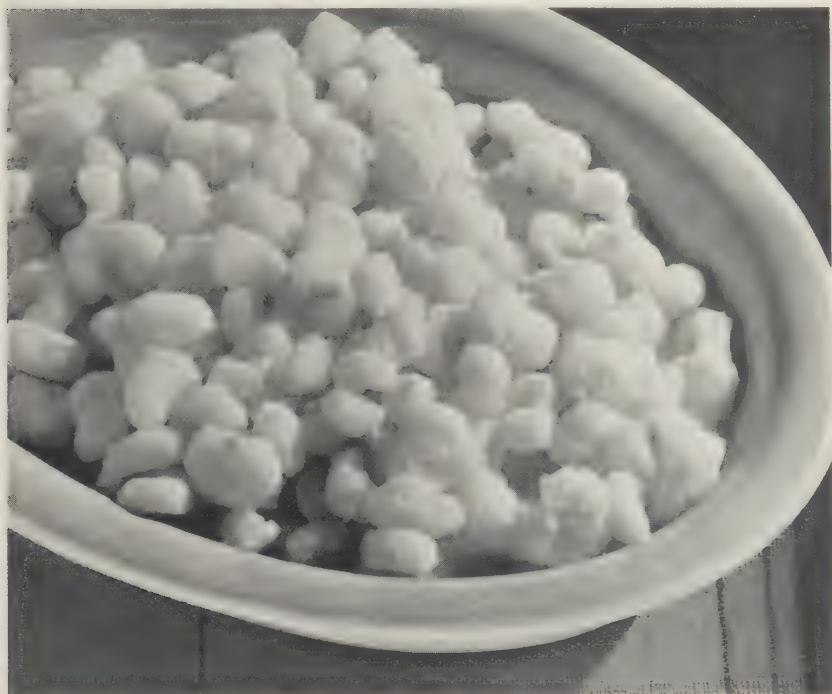
HOMINY

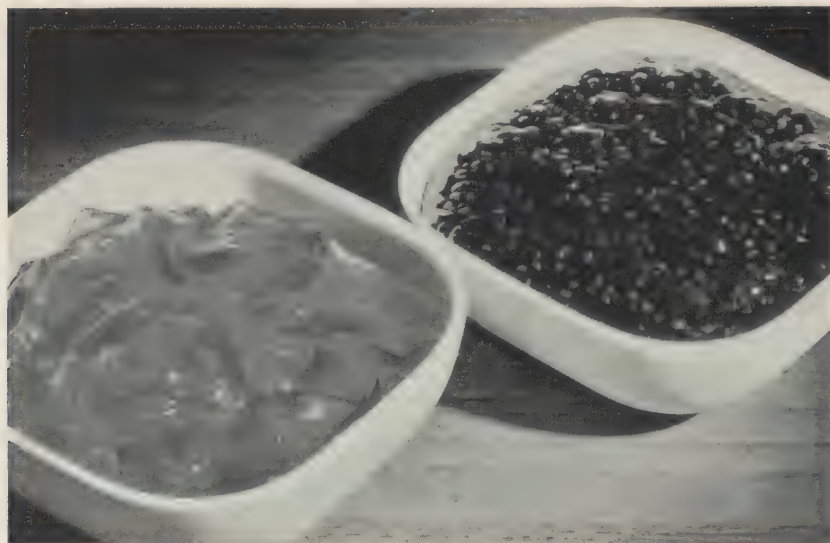
PREPARATION AND CANNING • Pearl hominy is made from white, dry, field corn. The large kernels are screened and then treated with a lye solution. This produces the characteristic swelling, and also loosens the hulls, which are removed by machine. This is followed by several washings to remove the lye. The prepared hominy is packed in either of two ways—*solid* pack or *brine* pack. In the solid pack, the hominy is filled into cans without any brine. When a *solid* pack can of hominy is opened, the contents are in a loaf form that may be sliced and fried. *Brine* pack hominy is prepared in much the same way, except that a hot salt solution is added so that the finished product is not a solid loaf. Both types are heat-processed in the containers.

DIETETIC VALUE • Canned hominy furnishes carbohydrates, but its principal contribution is adding variety to a diet, since it is a unique staple having great historical background.

USES • *Brine* pack hominy is most frequently used as a supplementary vegetable; it may be prepared in many interesting ways and adds variety to luncheons or dinners. The *solid* pack hominy is more often served as a breakfast cereal, with cream and sugar, or fried and served with syrup.

Brine pack





JAMS AND JELLIES

PREPARATION AND CANNING • A large variety of berries and fruits are used in the manufacture of jams and jellies. The methods used in their preparation are influenced to a considerable degree by the type of fruit. In general, jams are made by boiling the fruit pulp with approximately an equal weight of sugar to yield a product of moderately thick consistency. Jellies are made from the clear juice extracted from fruit and boiled either with or without the addition of water. Sugar and acid or pectin, or both acid and pectin, if required, are added to the juice and the mixture concentrated so that gelatinization takes place on cooling.

After boiling to produce the desired concentration, jams or jellies are filled hot into enamel-lined cans. High filling temperatures are employed so that sterilization of the sealed container is accomplished by inverting the cans for a short time before the cooling of the product is started.

DIETETIC VALUE • The most notable dietetic property of jams and jellies is the high caloric value derived from natural sugars of the fruit and the sugar added during their preparation.

USES • The uses of jams and jellies are as varied as the types of fruit used in the making of these products. They may be served at breakfast with bread or toast. They are used extensively in the preparation of numerous bakery products. At the main meal of the day, jellies are very often served with meats.

LIMA BEANS

PREPARATION AND CANNING • Lima beans, grown under close supervision, are harvested when they are young, green, and succulent. They are put through a viner which threshes the beans from the pods and vines. The beans are then graded for size, by being passed over a screen with various-sized openings. There are four sizes in common use, and some packers can them without sorting for size. All sizes are washed, carefully inspected for defective beans, packed in a weak salt brine, and seal-cooked in the can.

DIETETIC VALUE • The carbohydrate and fat contents are relatively high for a vegetable and, with the high protein content, yield a good caloric value. Lima beans also supply cellulose and hemicellulose materials which serve to increase intestinal bulk.

USES • Canned lima beans have a delicate flavor that makes them a welcome addition to many a meal, whether in the form of a supplementary vegetable, in a salad, or in soup.

Midget

Medium



*Fruit cocktail**Fruits for salad*

MIXED FRUITS

PREPARATION AND CANNING • Two types of fruit mixtures are canned—for *salad* and for *cocktails*. The *salad* type contains cut pieces of apricot, pear, peach and pineapple, with maraschino type cherries to heighten the color effect. In *cocktail* fruits, apricot is omitted and white grapes are added. The pieces are diced and the cherries halved. There is a definite proportion of each fruit in every can of both styles of pack. Since the fruits used do not ripen together, canned mixed fruits are prepared from first-grade fruits previously canned in syrup. For this reason, when the fruits are combined, they are packed solely in *Fancy* and *Choice* grades; the syrup in the *Fancy* grade is slightly sweeter than in the *Choice* grade.

DIETETIC VALUE • The major contribution of canned mixed fruits is in their carbohydrate content. Their color and flavor characteristics give mixed fruits an appetite appeal which should not be overlooked in avoiding dietary monotony.

USES • The fruits chosen for canning blend well in flavor and appearance, and make a delicious addition to any meal. Properly chilled, canned mixed fruits make a successful dessert when served alone. However, as the name implies, they are used chiefly in cocktails and salads, in combination with raw foods that are in season. They are also very good in gelatin and can be easily frozen in ice creams and ices.

PEACHES

PREPARATION AND CANNING • Peaches are canned in greater quantity than any other fruit, and the yellow *clingstone* variety makes up the majority of the pack. Increasing in favor, however, are the varieties of *freestone* peaches, which are less firm and often packed whole. Some prefer their different flavor and softer texture. *Clingstones* are packed in slices or halves. Peaches are hand picked to avoid any bruising, and, since only fruit in prime condition can be handled to the best advantage, picking is distributed over a period of time, permitting only ripe fruit to be taken. The fruit is peeled, washed, sorted, and packed into cans with sugar syrup. The three principal grades are *Fancy*, *Choice*, and *Standard*. Peaches are graded according to the perfection and uniformity of size, and the amount of sugar in the syrup in which they are packed.

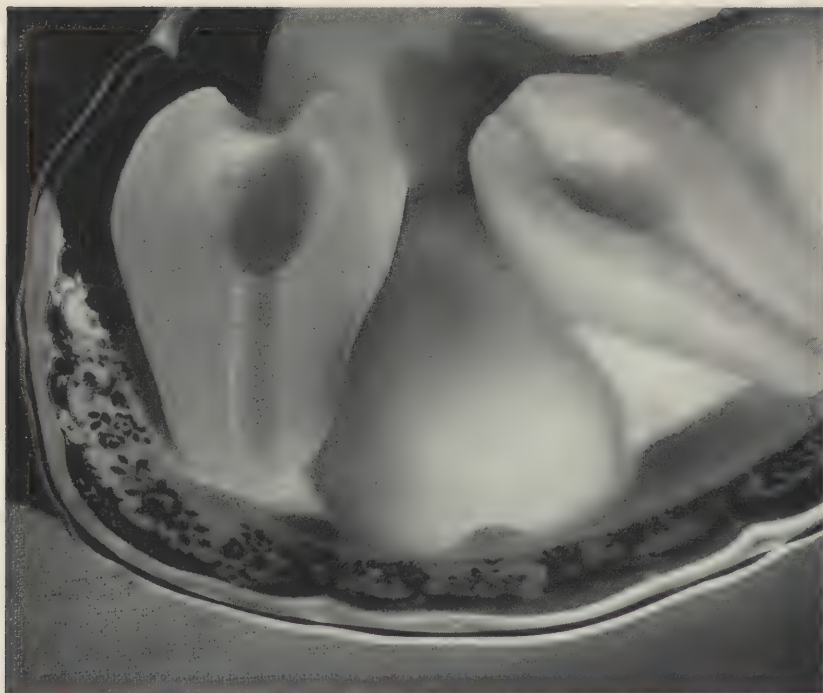
DIETETIC VALUE • Canned peaches are a good source of pro-vitamin A and supply vitamin C to a fair degree. Their chief source of energy is the natural fruit sugar, supplemented by the sugar of the syrup in which they are packed.

USES • Sliced peaches are particularly well suited for use in short cakes, and pies, or as a dessert served alone. Halves are also good as a dessert fruit or in salads.

Freestone halves

Clingstone halves





PEARS

PREPARATION AND CANNING • *Bartlett* and *Kieffer* pears are the two varieties most often used for canning. The *Bartlett* is a white, juicy pear, notable for its uniform shape and fine-grained texture. The *Kieffer* pear is smaller, firmer, and less sweet. *Bartlett* pears are packed in halves, and *Kieffers* in both halves and quarters. Because better flavor and finer texture results, pears are picked at full size and allowed to ripen in the cannery from five to ten days. Each day the fully ripened fruit is selected for packing. The pears are peeled, stemmed, and cored by hand and graded by the size and quality of the fruit, the three chief grades being *Fancy*, *Choice*, and *Standard*. *Fancy* grade is packed with the sweetest syrup. Since *Kieffer* pears have less natural sugar than *Bartletts*, they are packed in a sweeter, heavier syrup in all grades.

DIETETIC VALUE • The major nutritive value of canned pears lies in their own carbohydrate and the sugar added in the syrup in which they are packed.

USES • Canned pears are a desirable addition to menus because of the many appetizing food combinations in which they may be used—in salads, desserts, gelatin, and fruit cocktails.

PEAS

PREPARATION AND CANNING • Two general types of peas are used for canning—the varieties called *Early June* or *Alaska*, and those referred to as *Sweet* peas. *Alaska* peas are more nearly round than *Sweets*, which are somewhat flattened. The *Sweet* varieties are, of course, sweeter in flavor, but public preference seems to be evenly divided, since approximately equal quantities of each are sold. Both types are harvested before maturity, when they are tender and green. They are quickly vined or threshed; then cleaned, washed, and graded according to size and quality; then blanched, washed again, and placed in the containers. A small quantity of salt, and sometimes sugar, is used in the hot water which is added, and the cans are then sealed, and the peas seal-cooked. Size and quality govern the labeling of canned peas. Sizes run from the smallest, No. 1 (*Petit Pois*), to No. 6, and many are packed without separation according to size—these are called *Ungraded*, *Podrun* or *Run-of-pod*.

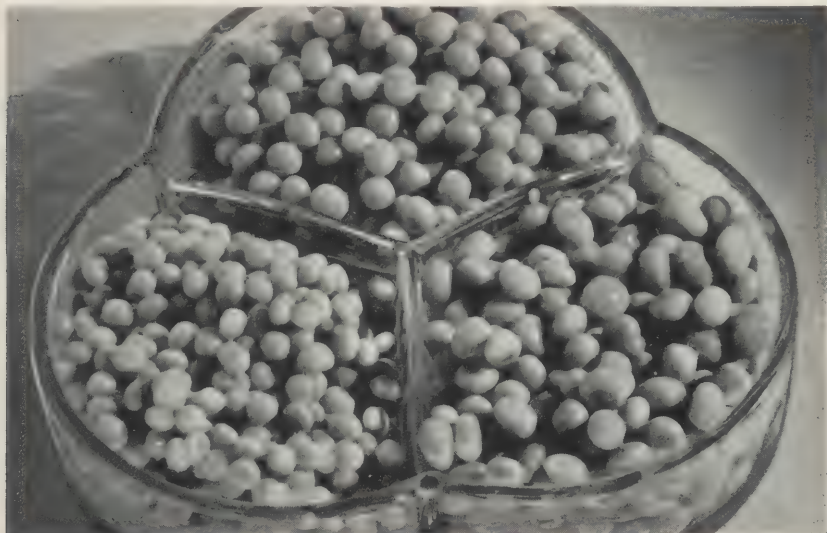
DIETETIC VALUE • Canned peas are an excellent source of pro-vitamin A and a good source of the vitamin complex and vitamin C. In regard to the vitamin B complex, canned peas are a good source of the pellagra-preventive factor, a member of this complex. They also contribute good amounts of minerals such as phosphorus and iron.

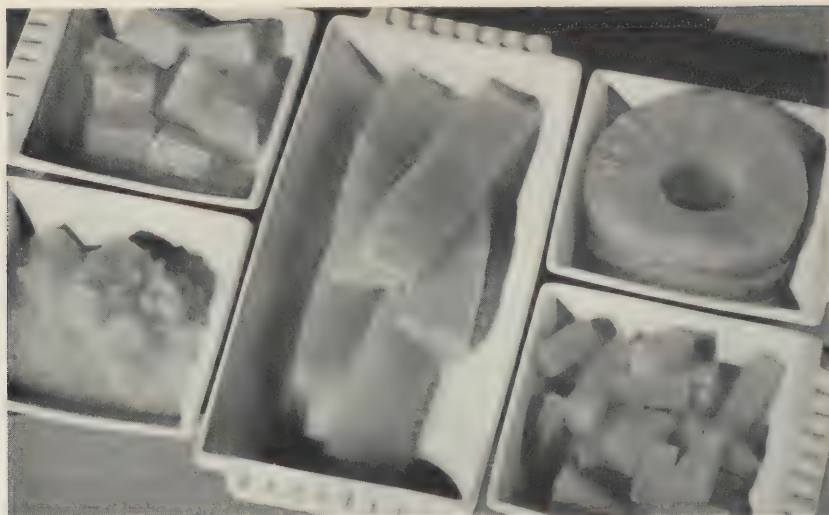
USES • The smaller peas are used chiefly as a garnish for steaks, chops, or roasts. Many consider the medium and larger peas superior in flavor and use them as a regular vegetable dish. The less expensive grades are better adapted to purees and soups.

No. 1 *Alaska*

No. 2 *Alaska*

Run-of-pod Sweet





Spoon cuts (top)
Crushed (bottom)

*Perpendicular
slices*

Sliced (top)
Tidbits (bottom)

PINEAPPLE

PREPARATION AND CANNING • The great bulk of canned pineapple is of the *Smooth Cayenne* variety, packed in the Hawaiian Islands. Canned pineapple is the only plant-ripened pineapple available on the mainland, for unlike most fruits, pineapple will not ripen after it is picked—and to be shipped “fresh” it must be picked green. The canned product has the true pineapple flavor because the fruit is picked ripe, when its natural sugars are developed to the full. The fruits are quickly transported to the canneries, where ingenious machines remove core and hull, leaving a cylinder of fruit to be cut for one of several styles of pack. The three major styles of canning are *sliced*, *crushed*, and *tidbits*. Long, narrow, perpendicular slices are packed in limited quantities, as are the chunks, or spoon cuts. The fruit left between the cylinder and the shell is scooped out, and this is known as *crushed* pineapple. *Tidbits* are slices which have been cut into uniform pieces. The grade of the pack varies with the degree of syrup and the uniformity of the fruit.

DIETETIC VALUE • Canned pineapple is a good source of vitamins C and B₁. Its carbohydrate content derived from natural sugars—as well as from the syrup in which pineapple products are usually packed—constitutes the other major nutritive value.

USES • Pineapple *slices* are especially good for dessert, in salads, in such dishes as pineapple upside down cake, as a garnish on baked or broiled meats. *Crushed* pineapple is excellent in frozen sherbets. Pineapple *tidbits* can be served alone, or in salads, and fruit cocktails.

PLUMS AND PRUNES

PREPARATION AND CANNING • Canned plums or prunes come in many styles, but all are derived from varieties of plums. Those known as *Green Gage*, *Yellow Egg*, *Lombard* and *Fresh Prunes* are packed as *fresh fruit* (not dried) and usually labeled *Italian Prunes*. There are also canned *prepared prunes*, which are *dried plums* of *certain cultivated varieties*. Dried prunes are packed in syrup or vacuum packed without syrup.

The fresh fruit is delivered to the plant, pre-graded for weight and size, and transferred to the picking tables where stems, leaves, and defective plums are removed. The remaining fruit is then washed and again size-graded. The fruit is filled into cans by hand, and very hot sugar syrup is added. The cans are sealed, and the fruit is cooked in the can. Plums come in the following grades: *Fancy*, *Choice*, *Standard*, *Seconds*, packed in water (trade designation, *Water*), and packed for bakery use (trade designation, *Pie*). Heavy syrup is used for *Fancy*, and the amount of sugar, as well as size and uniformity of the fruit, decreases with the grade designations.

DIETETIC VALUE • Because of the high natural sugar content of tree-ripened plums and the added sugar in the syrup, canned plums have a caloric value relatively high for a fruit. Like most fruits, the ash content of plums is low. Canned plums are rich in provitamin A, and possess moderate vitamin B and G activity (riboflavin), being somewhat richer in the latter.

USES • The most frequent uses of fancier grades of plums are as a breakfast fruit, mixed fruits for dinner desserts (served with cake or cookies), prune cake and upside down cake. Other grades may be used for pies and whips.

*Fresh (bottom)**Dried**Green Gage**Prepared (bottom)*



PORK AND BEANS

PREPARATION AND CANNING • There are two common types of canned pork and beans. In one type the beans are baked in ovens before canning; these are properly called *baked* beans. In the other type, the beans are simply cooked in the can, after sealing. Pork and beans differ not only in the type of pack, but also in the style of the sauce used in their preparation. Some are packed with plain sauce, some with tomato sauce. Sometimes the pork is omitted, when a “vegetarian” product is desired. The beans used are carefully cleaned and washed before the preparatory steps, which differ with various packers. All are cooked in the can after sealing, however.

DIETETIC VALUE • Canned pork and beans are among the most economical sources of protein and carbohydrates. They are also an excellent source of food energy and contain vitamin B₁.

USES • Both types of packs of pork and beans are delicious, the choice depending upon individual taste. The convenience of the can reduces preparation time to easy minutes. Pork and beans make an excellent dish, served plain, or heated with seasoning. They are also delicious served cold—just as they come from the can. Their high food value and ease of preparation make them a great favorite.

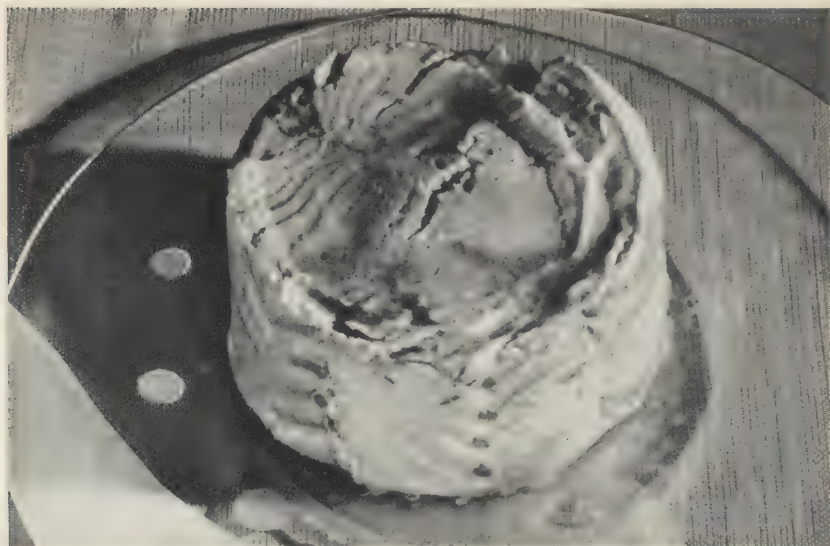
PUMPKIN

PREPARATION AND CANNING • The many varieties of pumpkin and squash are closely related, so much so that many canners use both in preparing canned pumpkin. The blend of pumpkin and squash produces a final product having the desirable qualities of each. Upon delivery to the cannery, the pumpkins are soaked and washed. They are then cut into pieces about four inches square. After cutting into pieces, seeds are removed by hand or by a revolving drum. The chunks of flesh are then wilted by steam in small batches or in a continuously operating "tower cooker." If necessary, the softened pulp is put through a press or cooked a little to eliminate excess moisture. A machine removes skin and any remaining seeds, leaving a pulpy, uniform product. This is heated to a high temperature and filled in cans, the cans sealed, and the pumpkin and squash heat-processed.

DIETETIC VALUE • Canned pumpkin's chief nutritive value is in its relatively high carbohydrate content—natural sugar and starch.

USES • The most popular use of canned pumpkin is in pies; however, it also makes a delicious supplementary vegetable.



*Chinook*

SALMON

PREPARATION AND CANNING • In far away Alaska and in the Pacific Northwest, fishermen bring to canneries on the shore catches of salmon just taken from clear, icy water. These large, meaty fish are cleaned, eviscerated, cut, and filled into cans entirely by machine with surprising speed. They are sealed in cans with a little salt while their ocean freshness is at its peak, and then seal-cooked. These are the three commonest varieties of canned salmon: 1) *Chinook* (also called *King*) usually commands a higher price because less of it is caught. It is graded according to color, which ranges from red to white. The large flakes and abundance of oil give this salmon a soft texture so that it is more suitable for salads than for cooked dishes. 2) *Red* (also called *Sockeye* or *Alaska Red*) is usually a deep red color and has considerable oil. The flake is small and firm. 3) *Pink* is found in great abundance, and this brings the price very low. It is of delicate flavor, fine texture and pale color. Half of the American pack consists of this species.

DIETETIC VALUE • Canned salmon is an excellent source of protein, and its high fat content makes it a good source of food energy. It is rich in iodine and phosphorus and also supplies a good amount of iron. Canned salmon has been found to contain vitamin A and to be an unusually good source of that hard-to-find vitamin D. It is also a good food-source of the pellagra-preventive vitamin.

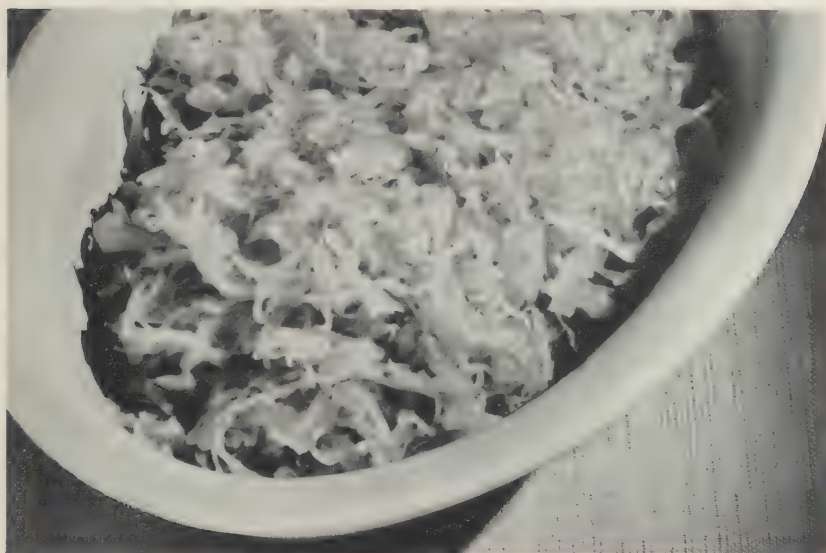
USES • Some of the countless ways in which canned salmon is delicious are: cold, in salads, creamed, and à la king.

SAUERKRAUT

PREPARATION AND CANNING • Sauerkraut is a fermented food, and is really pickled cabbage, just as pickles are pickled cucumbers. From start to finish, the canning procedure for sauerkraut is a controlled process. Beginning with the selection of the cabbages, all operations such as shredding, salting, and fermenting are closely followed. The salt content is carefully regulated; the fermentation temperature is held within narrow limits; the curing, or pickling, is stopped by canning when a definite acidity is attained. Weeks are required before the sauerkraut is properly cured, filled into cans, and heat-processed.

DIETETIC VALUE • Because of its low caloric value, canned sauerkraut may be freely used in diets in which a low caloric intake is desired. The vitamin B₁ and C content, as well as the content of minerals such as calcium and iron, may show variations due to natural variation in the cabbage from which the sauerkraut is prepared or differences in the canning technique employed. Acceptable canning procedures, however, retain in good degree the vitamins present in cured sauerkraut. Sauerkraut also supplies cellulose materials which serve to increase intestinal bulk.

USES • Canned sauerkraut is delicious served with many hot meats. It is especially good with spare-ribs, roast pork, duck, and chicken. Canned sauerkraut and frankfurters make a satisfying and decidedly economical lunch or dinner dish. It may also be served cold as a relish or in place of a salad.





SHRIMP

PREPARATION AND CANNING • Shrimp fishing is done mostly in southern coastal waters. The shrimp are packed in ice immediately after being taken from the water. The catch is taken to nearby canneries, where the shrimp are carefully inspected, sorted, and picked. Picking is done by hand, and consists of pulling off the head, then peeling the shell from the tail portion. The shrimp are washed, then parboiled. After parboiling, the pink meats are spread out to dry on frames or wire mesh belts. This operation prevents the pieces from sticking together or matting in the can. They are graded by size and are hand-filled into cans. Shrimp are packed in two ways—*wet pack* (with a salt and water brine), and *dry pack* (vacuum packed without liquid). Both are heat-processed.

DIETETIC VALUE • Canned shrimp are a good source of minerals—especially iodine. They are also an excellent source of highly digestible protein, and contain vitamins A and D.

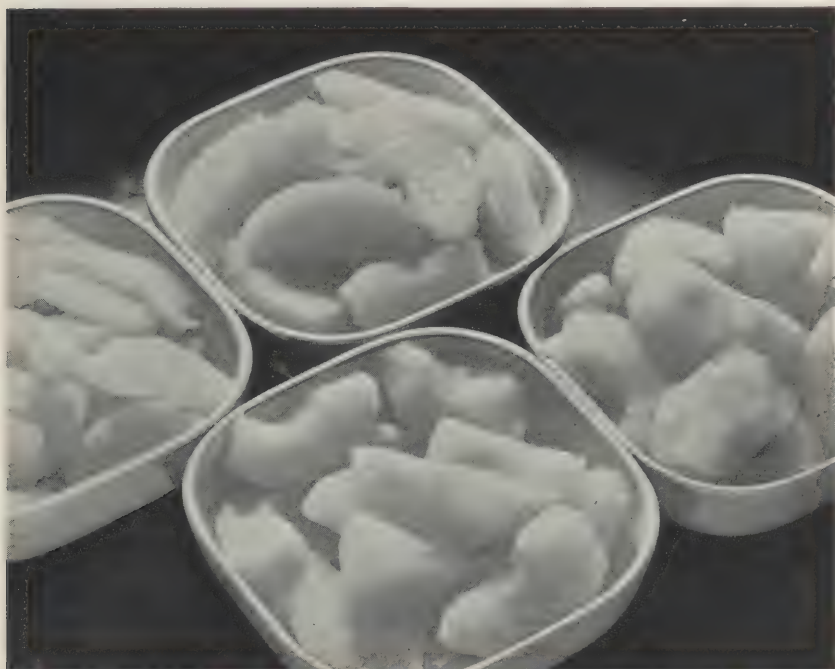
USES • There are many delightful ways to serve canned shrimp—in salads, cocktails, appetizers; or fried, creamed, or broiled as the principal dish of the meal.

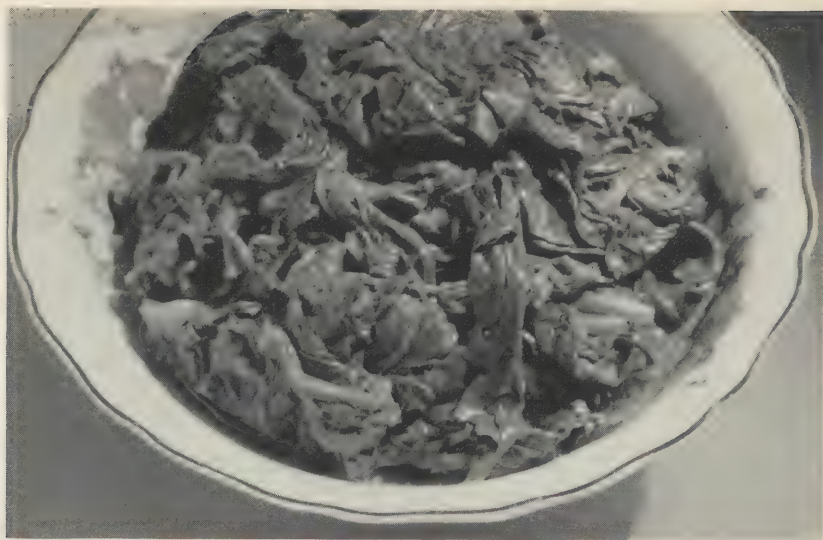
SLICED APPLES

PREPARATION AND CANNING • Apples of the tart varieties having good flavor, color and texture, and which hold their shape when cooked are used in the preparation of this canned fruit. Thoroughly washed apples are peeled, cored and trimmed before being sliced. The sliced fruit is then blanched to destroy the enzymes, expel air from the fruit and to soften the tissues. The blanched apples are then packed solidly into the cans and covered with a small amount of hot water, dilute brine or syrup. The filled cans are thermally exhausted, sealed and heat processed in boiling water.

DIETETIC VALUE • The chief nutritive values of canned solid pack sliced apples are supplied by the natural sugars contained in the fresh raw fruit. The fruit acids produce a mildly laxative effect. Apples also contain cellulose material which aids in increasing intestinal bulk.

USES • Sliced apples are extensively used in making a popular dessert of the American people—apple pie. However, sliced apples make possible tempting variations when used in the following ways: in vegetable dishes (apple and parsnip casserole; apple and sweet potato casserole), added to canned mixed fruits for desserts, apple cake, apple crisp, bread pudding, fried apples with sausages or ham.





SPINACH

PREPARATION AND CANNING • Immediately after cutting or pulling, the spinach is rushed to the cannery, and a very short time elapses before it is sealed in the can. It is delivered first to the cutting tables where it is sorted, and all grass and defective leaves are removed. The spinach is then subjected to a most thorough cleansing. Well-known to housewives is the tenacity with which sand or grit from the fields clings to spinach leaves. The perfection of clever washers, however, has made possible canned spinach which is free of grit. Soaking loosens dirt, paddles immerse leaves and agitate them, strong sprays dislodge every particle. Additional cleansing is effected in the hot water or steam blanching operation, the main purpose of which is to wilt the leaves to facilitate packing a full can. Dilute salt brine is added to the filled cans, and they are then seal-cooked.

DIETETIC VALUE • Canned spinach is an excellent source of provitamin A and the factor formerly measured as G (riboflavin), a good source of vitamin C, and a fair source of vitamin B₁. Due to its low fat, protein, and carbohydrate content, spinach has a low caloric value. This vegetable is high in fiber and iron, although only a portion of the latter is present in an available form. However, because of its several desirable nutritive contributions, spinach may well retain its place as a valuable food, along with other leafy vegetables.

USES • Spinach can be served in a variety of ways: as a supplementary vegetable dish, plain or garnished with whole or minced hard-cooked eggs. Cream of spinach soup offers another tasty way to serve this nutritious food.

STRINGLESS BEANS

PREPARATION AND CANNING • Canned stringless beans may be had as *green* beans or as *wax* beans. Both types have been especially developed for canning purposes to be without strings, and both are canned by the same procedure. The beans are rushed to the cannery immediately after picking. After careful sorting, the ends are snipped off by machine, the beans vigorously sprayed with water, and then blanched: treated for a few minutes with boiling water. They are filled into the cans with a weak salt brine, then seal-cooked in the cans. Canned stringless beans are graded according to size—the smaller the size, the higher the grade (because nature produces fewer of them). The largest beans are usually cut into short lengths before canning and labelled *cut beans*. Some packers put the long, slender, green beans vertically in a can (after cutting to the proper length); this type of pack is growing in popularity.

DIETETIC VALUE • Canned stringless beans contribute only small amounts of protein and fat to the diet. Therefore, since the carbohydrate content is not high, the food is a valuable supplement to diets in which a low caloric intake is desired. Canned stringless beans are also an important source of fiber.

USES • Canned stringless beans are served principally as a supplementary vegetable; but also make a delightful addition to vegetable salads or soups.

Cut green Whole green (top) Whole wax (bottom) Asparagus style green





Vacuum packed

SWEET POTATOES

PREPARATION AND CANNING • Sweet potatoes are canned in three ways: *vacuum packed*, *syrup pack*, and *solid pack*. In the *vacuum* and *syrup* packs, the potatoes retain their shape, and these packs are more popular for that reason. Small potatoes are cleaned, washed, peeled, and washed again. Hand trimming to remove ends, rootlets, and spots is followed by filling into the cans as compactly as possible without mashing. The cans are vacuum-sealed, or hot sugar syrup is added before sealing. The finished product is heat-processed and cooled. The *solid pack* is pressed into the can with no space between the potatoes, and opening reveals a solid cylinder of potatoes.

DIETETIC VALUE • Canned sweet potatoes are an excellent source of calories due to their high carbohydrate content. They are also rich in carotene or provitamin A.

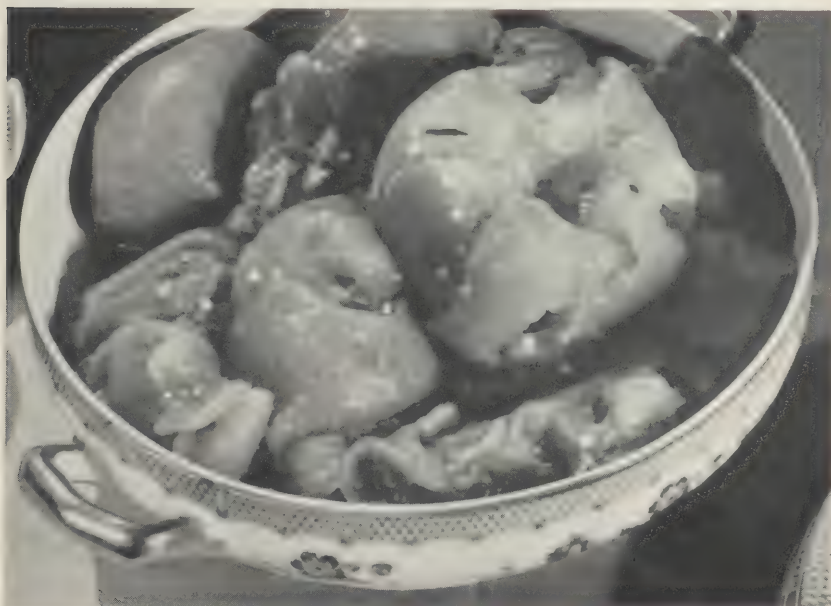
USES • Canned sweet potatoes are served principally as a supplementary vegetable. They are delightful candied, fried, or mashed. They may also be used for sweet potato pie.

TOMATOES

PREPARATION AND CANNING • Tomatoes grown for canning are the result of many years' work by seedsmen. The result has been greatly improved strains of tomatoes, bred solely for canners' use. These special tomatoes are plucked red-ripe and taken immediately to the cannery. There they are washed thoroughly, scalded for peeling, then peeled and trimmed by hand. *Fancy* grades are filled into cans by hand—others by semi-automatic machines. No water is added, the juice being that from the tomatoes in the can. A little salt is added, and the sealed cans are heat-processed. Tomatoes are canned in three grades—*Fancy*, *Extra Standard*, and *Standard*, the chief difference between them being the depth and uniformity of color, the solidity and wholeness of the tomatoes, and the freedom from small pieces of skin and core. *Standard* grades may be packed with a puree of tomato pulp, which is stated on the label.

DIETETIC VALUE • Canned tomatoes are rich in vegetable acids and contribute significant amounts of desirable mineral elements. They combine the properties of fruits and green vegetables. They are one of the very best sources of vitamin C, and a good source of provitamin A, vitamin B₁, and related B factors.

USES • There are many delicious ways for serving canned tomatoes, other than as an extra vegetable dish. They are excellent in an omelet, au gratin, in soups, or with spaghetti.





TOMATO CATSUP

PREPARATION AND CANNING • Tomato Catsup is a concentrated product made from the pulp and juice of ripe tomatoes and seasoned with vinegar, salt, sugar and various spices. The character and flavor of commercial catsup vary largely according to the kinds and proportions of spices used. Tomatoes for catsup are carefully sorted, then thoroughly washed and trimmed. They are next cycloned—a process which crushes the fruit and separates the juice and pulp from the seeds, skin and fibre. The liquid is seasoned and cooked to concentrate and blend the various ingredients. The extent of this cooking depends entirely upon the consistency desired in the finished product. When the cooking process is finished, the catsup is run through a screening device to remove any aggregations of material. It is then filled into cans and immediately sealed.

DIETETIC VALUE • The tomato solids included in catsup contain excellent amounts of pro-vitamin A. Vitamins B₁ (thiamin), C (ascorbic acid), B₂ (riboflavin), and Nicotinic Acid are also supplied in valuable amounts. Due to the natural sugars in the tomato pulp, plus the sugar added, catsup is approximately 25% carbohydrate.

USES • Catsup is popular served with meats, hashes, baked beans, and codfish cakes. It may also be used in making gravies, sauces, and creole dishes.

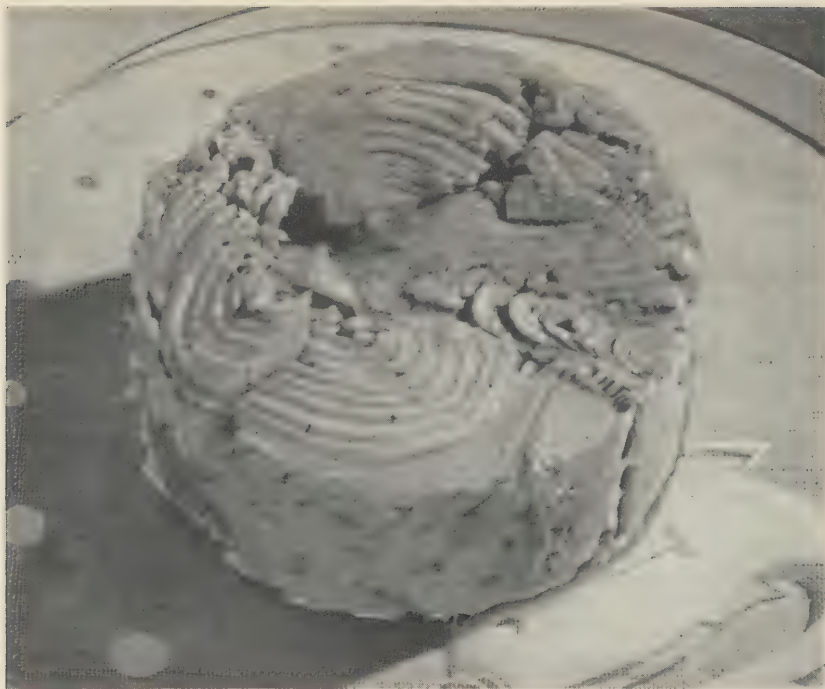
TOMATO JUICE

PREPARATION AND CANNING • Canned tomato juice is made from the whole, red-ripe tomato, from which nothing has been removed except seeds, skin, and core. Nothing is added except a little salt for seasoning. The product is actually whole tomatoes in liquid form. Various machines are used to press the tomatoes, and the juice is preheated and filled into the cans immediately after pressing. Sealing and heat-processing are a matter of minutes, and the juice is then cooled before storing in the warehouse.

DIETETIC VALUE • Inclusion of the pulp of the tomato insures an excellent provitamin A content in the product, since this vitamin is associated almost entirely with the solid portions of the tomato. Vitamin B₁ is present to a lesser extent than provitamin A, though canned tomato juice is a good source of the anti-neuritic factor. Though several vitamins are present, canned tomato juice is valued chiefly for the vitamin C. Modern methods retain the natural anti-scorbutic potency of the tomato in high degree.

USES • Canned tomato juice is most frequently served as a cocktail, with or without seasoning, or as a breakfast juice. It is also useful in making soup, or as an ingredient in sauces for spaghetti and other dishes.





TUNA

PREPARATION AND CANNING • The tuna is a game fish of the mackerel family. It is found in many waters, and although most canned tuna comes from the Pacific coast, it is also packed in New England. The fish are caught individually with hook and line. The different species used for canning range from fifteen to over one hundred pounds, and it takes two or three men, each with a pole attached to the main line on one hook, to land the largest fish. Modern tuna boats have complete refrigeration facilities to keep the fish in prime condition while returning to shore. At the cannery the fish are cleaned, eviscerated, and cooked with live steam. The tuna meat is then cut into proper lengths to be packed into the can. Oil is added; the cans are sealed and then heat-processed and cooled.

DIETETIC VALUE • Canned tuna fish is an excellent source of proteins and a fair source of vitamins A and D. The iodine content of canned tuna fish is its outstanding mineral value.

USES • Tuna fish is delightful in a large variety of dishes. For cold dishes, it is especially good in salads, in cocktails, or in sandwiches. Hot, it is excellent creamed.

*It is our sincere hope that this booklet about
canned food will prove helpful to supply officers,
mess sergeants and cooks.*

*If any further information is desired, be sure to
send the questions in to us.*

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